

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Errors
1	B R S	L1	0	(business near2 (rule\$1 or guidance)) with reference\$3 with (contract or agreement)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:51		0
2	B R S	L2	9	(business near2 (rule\$1 or guidance)) with (contract or agreement)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:48		0
3	B R S	L3	8	("5008853"   "5181162"   "5272623"   "5446653"   "5623653"   "5666490"   "5692206"   "5732219").PN.	USPAT	2003/07/21 16:45		0
4	B R S	L4	4	6067531.URPN.	USPAT	2003/07/21 16:45		0
5	B R S	L5	2329	705/1,35,37,80,26,400.ccls.	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:50		0
6	B R S	L7	1034	707/101.ccls.	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:50		0
7	B R S	L8	10397	705/\$7.ccls.	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:50		0
8	B R S	L9	12	3 or 4	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:50		0
9	B R S	L10	7	9 and 5	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:50		0
10	B R S	L11	178	(business near2 (rule\$1 or guidance)) and (contract or agreement)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:51		0
11	B R S	L12	0	10 and 11	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:51		0
12	B R S	L13	825	(business near2 (rule\$1 or guidance))	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:52		0
13	B R S	L14	0	10 and 13	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:51		0
14	B R S	L15	28478 7	(rule\$1 or guidance)	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:52		0
15	B R S	L16	4	10 and 15	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:54		0
16	B R S	L17	3	10 not 16	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:57		0
17	B R S	L18	16	5272623.URPN.	USPAT	2003/07/21 16:57		0
18	B R S	L19	21	2 or 9	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:57		0
19	B R S	L20	14	18 not 19	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:57		0

	Type	L #	Hits	Search Text	DBs	Time Stamp	Corrections	Errors
20	B R S	L21	0	20 and 11	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:58		0
21	B R S	L22	0	20 and 13	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 16:58		0
22	B R S	L23	8	20 and 15	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 17:01		0
23	B R S	L24	29	19 or 23	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 17:01		0
24	B R S	L25	1	(creat\$3 near4 (contract or agreement)) same 13	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 17:03		0
25	B R S	L26	11	(creat\$3 near4 (contract or agreement)) and 13	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 17:03		0
26	B R S	L27	10	26 not 24	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 17:26		0
27	B R S	L28	39	27 or 24	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 17:27		0
28	B R S	L29	15	dynamic and 28	USPAT; EPO; JPO; DERWENT; IBM_TDB	2003/07/21 17:27		0

Welcome to DialogClassic Web(tm)

Dialog level 02.17.00D  
Last logoff: 18jul03 18:58:59  
Logon file405 21jul03 17:03:09

\*\*\* ANNOUNCEMENT \*\*\*

\*\*\*

--File 654 - US published applications from March 15, 2001 to the present are now online. Please see HELP NEWS 654 for details.

\*\*\*

--File 581 - The 2003 annual reload of Population Demographics is complete. Please see Help News581 for details.

\*\*\*

--File 156 - The 2003 annual reload of ToxFile is complete. Please see HELP NEWS156 for details.

\*\*\*

--File 990 - NewsRoom now contains February 2003 to current records. File 992 - NewsRoom 2003 archive has been newly created and contains records from January 2003. The oldest months's records roll out of File 990 and into File 992 on the first weekend of each month. To search all 2003 records BEGIN 990, 992, or B NEWS2003, a new OneSearch category.

\*\*\*

--Connect Time joins DialUnits as pricing options on Dialog. See HELP CONNECT for in

\*\*\*

\*\*\*

--SourceOne patents are now delivered to your email inbox as PDF replacing TIFF delivery. See HELP SOURCE1 for more information.

\*\*\*

--Important news for public and academic libraries. See HELP LIBRARY for more information.

\*\*\*

--Important Notice to Freelance Authors--  
See HELP FREELANCE for more information

\*\*\*

NEW FILES RELEASED

\*\*\*World News Connection (File 985)  
\*\*\*Dialog NewsRoom - 2003 Archive (File 992)  
\*\*\*TRADEMARKSCAN-Czech Republic (File 680)  
\*\*\*TRADEMARKSCAN-Hungary (File 681)  
\*\*\*TRADEMARKSCAN-Poland (File 682)

\*\*\*

UPDATING RESUMED

\*\*\*

RELOADED

\*\*\*Population Demographics -(File 581)  
\*\*\*CLAIMS Citation (Files 220-222)

REMOVED

\*\*\*

>>> Enter BEGIN HOMEBASE for Dialog Announcements <<<  
>>> of new databases, price changes, etc. <<<

\*\*\*\*\*

HILIGHT set on as ' '

>>>100 is not in the range between 1 and 50, original value 30 is used.  
IGOR705 is set ON as an alias for 2,9,15,16,20,35,65,77,99,148,160,233,256,275,347,3

10,813.

IGORMEDIC is set ON as an alias for 5,34,42,43,73,74,129,130,149,155,442,444,455.

IGORINSUR is set ON as an alias for 169,625,637.

IGORBANK is set ON as an alias for 139,267,268,625,626.

IGORTRANS is set ON as an alias for 6,63,80,108,637.

IGORSHOPCOUPON is set ON as an alias for 47,570,635, PAPERSMJ, PAPERSEU.

IGORINVEN is set ON as an alias for 6,7,8,14,34,94,434.

IGORFUNDTRANS is set ON as an alias for 608.

**\* \* \* \* See HELP NEWS 225 for information on new search prefixes  
and display codes**

\*\*\*

\*\*\*

SYSTEM:HOME

Cost is in DialUnits

\*\*\* DIALOG HOMEBASE(SM) Main Menu \*\*\*

Information:

1. Announcements (new files, reloads, etc.)
2. Database, Rates, & Command Descriptions
3. Help in Choosing Databases for Your Topic
4. Customer Services (telephone assistance, training, seminars, etc.)
5. Product Descriptions

Connections:

6. DIALOG(R) Document Delivery
7. Data Star(R)

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All rights reserved.

/H = Help

/L = Logoff

/NOMENU = Command Mode

Enter an option number to view information or to connect to an online  
service. Enter a BEGIN command plus a file number to search a database  
(e.g., B1 for ERIC).

?

B IGOR705

>>> 77 does not exist

>>>1 of the specified files is not available

21jul03 17:03:35 User268082 Session D28.1

\$0.00 0.232 DialUnits FileHomeBase

\$0.00 Estimated cost FileHomeBase

\$0.10 INTERNET

\$0.10 Estimated cost this search

\$0.10 Estimated total session cost 0.232 DialUnits

SYSTEM:OS - DIALOG OneSearch

File 2:INSPEC 1969-2003/Jul W2

(c) 2003 Institution of Electrical Engineers

**\*File 2: Alert feature enhanced for multiple files, duplicates  
removal, customized scheduling. See HELP ALERT.**

File 9:Business & Industry(R) Jul/1994-2003/Jul 18

(c) 2003 Resp. DB Svcs.

File 15:ABI/Inform(R) 1971-2003/Jul 19

(c) 2003 ProQuest Info&Learning

**\*File 15: Alert feature enhanced for multiple files, duplicate  
removal, customized scheduling. See HELP ALERT.**

File 16:Gale Group PROMT(R) 1990-2003/Jul 21

(c) 2003 The Gale Group

**\*File 16: Alert feature enhanced for multiple files, duplicate removal, customized scheduling. See HELP ALERT.**

File 20:Dialog Global Reporter 1997-2003/Jul 21  
(c) 2003 The Dialog Corp.

File 35:Dissertation Abs Online 1861-2003/Jun  
(c) 2003 ProQuest Info&Learning

File 65:Inside Conferences 1993-2003/Jul W3  
(c) 2003 BLDSC all rts. reserv.

File 99:Wilson Appl. Sci & Tech Abs 1983-2003/Jun  
(c) 2003 The HW Wilson Co.

File 148:Gale Group Trade & Industry DB 1976-2003/Jul 21  
(c)2003 The Gale Group

**\*File 148: Alert feature enhanced for multiple files, duplicate removal, customized scheduling. See HELP ALERT.**

File 160:Gale Group PROMT(R) 1972-1989  
(c) 1999 The Gale Group

File 233:Internet & Personal Comp. Abs. 1981-2003/May  
(c) 2003 Info. Today Inc.

File 256:SoftBase:Reviews,Companies&Prods. 82-2003/Jun  
(c)2003 Info.Sources Inc

File 275:Gale Group Computer DB(TM) 1983-2003/Jul 21  
(c) 2003 The Gale Group

File 347:JAPIO Oct 1976-2003/Mar(Updated 030703)  
(c) 2003 JPO & JAPIO

**\*File 347: JAPIO data problems with year 2000 records are now fixed.**  
Alerts have been run. See HELP NEWS 347 for details.

File 348:EUROPEAN PATENTS 1978-2003/Jul W02  
(c) 2003 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20030717,UT=20030710  
(c) 2003 WIPO/Univentio

File 474:New York Times Abs 1969-2003/Jul 18  
(c) 2003 The New York Times

File 475:Wall Street Journal Abs 1973-2003/Jul 18  
(c) 2003 The New York Times

File 476:Financial Times Fulltext 1982-2003/Jul 21  
(c) 2003 Financial Times Ltd

File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13  
(c) 2002 The Gale Group

**\*File 583: This file is no longer updating as of 12-13-2002.**

File 610:Business Wire 1999-2003/Jul 21  
(c) 2003 Business Wire.

**\*File 610: File 610 now contains data from 3/99 forward.**  
Archive data (1986-2/99) is available in File 810.

File 613:PR Newswire 1999-2003/Jul 21  
(c) 2003 PR Newswire Association Inc

**\*File 613: File 613 now contains data from 5/99 forward.**  
Archive data (1987-4/99) is available in File 813.

File 621:Gale Group New Prod.Annou.(R) 1985-2003/Jul 18  
(c) 2003 The Gale Group

File 624:McGraw-Hill Publications 1985-2003/Jul 21  
(c) 2003 McGraw-Hill Co. Inc

**\*File 624: Homeland Security & Defense and 9 Platt energy journals added**  
Please see HELP NEWS624 for more

File 634:San Jose Mercury Jun 1985-2003/Jul 19  
(c) 2003 San Jose Mercury News

File 636:Gale Group Newsletter DB(TM) 1987-2003/Jul 21  
(c) 2003 The Gale Group

File 810:Business Wire 1986-1999/Feb 28  
(c) 1999 Business Wire

Set	Items	Description
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?		
S (BUSINESS (2N) (RULE? OR GUIDANCE)) AND (CREAT??? (4N) (CONTRACT OR AGREEMENT))		
Processing		
Processing		
Processing		
Processed 10 of 28 files ...		
Processing		
Processed 20 of 28 files ...		
Processing		
Processing		
Completed processing all files		
	37932470	BUSINESS
	3721921	RULE?
	747685	GUIDANCE
	68380	BUSINESS (2N) (RULE? OR GUIDANCE)
	9457944	CREAT???
	3779879	CONTRACT
	1454	AGREEMENT
	15111	CREAT??? (4N) (CONTRACT OR AGREEMENT)
S1	179	(BUSINESS (2N) (RULE? OR GUIDANCE)) AND (CREAT??? (4N) (CONTRACT OR AGREEMENT))

?

S S1 AND (DYNAMIC OR DYNAMICALLY) AND (ATERED OR ALTERING OR ALTER)

	179	S1
	1386827	DYNAMIC
	189626	DYNAMICALLY
	16	ATERED
	150367	ALTERING
	374438	ALTER
S2	23	S1 AND (DYNAMIC OR DYNAMICALLY) AND (ATERED OR ALTERING OR ALTER)

?

T S2/TI, KWIC/1-23

2/TI,KWIC/1 (Item 1 from file: 15)  
DIALOG(R)File 15:(c) 2003 ProQuest Info&Learning. All rts. reserv.

#### Anatomy of a process mapping workshop

...TEXT: includes IDEF1 for capturing the information needs of a process, and IDEF2 for documenting the **dynamic** behavior of a process. It is widely used in process mapping, and is in fact...explicit consideration of the individual case. The debate at this point was on whether these **business rules** should be included in the process map, and if so how.

The final topic ...top-level map was to create two sub-activities (Figure 8): assess customer needs and **create contract**. In this map the sales process becomes very simple: first, identify what it is the...were presented to the participants after lunch. The discussion that followed did little to fundamentally **alter** the nature of these maps, although many details were added.

Late in the day the...to these human factors, we believe that an essential characteristic of this workshop was the **dynamic** flow between refinement of current ideas and the periodic creation of radically new ones. The...

2/TI,KWIC/2 (Item 2 from file: 15)  
DIALOG(R)File 15:(c) 2003 ProQuest Info&Learning. All rts. reserv.

**Turning servile opportunities to gold: A Strategic analysis of the corporate opportunities doctrine**

...TEXT: senior executive, approval by a disinterested superior (both subject to review under the relatively lax **business** judgment rule ), 66 or alternatively, approval or ratification by the disinterested shareholders (subject to a "waste" standard... 80 and 100.158 Thus, in order to exploit all possible gains from trade, a **contract** must create incentives that ensure that ultimate control flows in a similar direction.

Complete information is particularly...MODEL

In this Part, I consider how several variations of the model analyzed above might **alter** its substantive conclusions. Such an inquiry is an important one, particularly if one is interested...

...that presumably enjoys an overall cost advantage in production. 217

It is, however, possible to **alter** the model and generate examples in which the population of customers tends to "follow" the...so as to attract at least some projects that the principal finds profitable. The optimal **contract** creates such incentives by combining both "carrots" (i.e., allowing some appropriations) for projects that are...

... meta-thesis" that implicates many of the arguments in this Article: the critical role of **dynamic** commitment. Both the results from Part III and the arguments from the previous Subsection strongly...

...corporations and fiduciaries to negotiate around the default doctrine ex post. In some sense, the **dynamic** commitment problem provides a rationale for treating the default rules characterized above as immutable once... shareholder value alone. Second, my results expose a tension that often exists between static and **dynamic** normative concerns. In order to create appropriate incentives, rules that are efficient ex ante frequently... 21 (1971). My analysis does not adopt this latter definition, however, because of the complex **dynamic** interaction between legal rules and actual bargaining. See infra text accompanying notes 82-91.

15... the disinterested directors reject the opportunity "in a manner that satisfies the standards of the **business** judgment rule "). 67. ALI PCG, supra note 20, 5.02(a)(2)(d).

68. Id 5.05... model should clearly distinguish between simplifying assumptions (i.e., those that can be relaxed without **altering** the qualitative results) and critical assumptions (i.e., those that cannot).

121. The example embodies... at the firm) further justifies this general approach. It is, of course, quite simple to **alter** this assumption and constrain the firm's specialty to "track" the insider's. Doing so... project. It is in such situations that the parties or a court may wish to **alter** the terms of the optimal rule.

227. As noted above, commitment problems such as these...

... these tests requires a court to examine the repercussions of a settlement on the prospective **dynamic** ability to commit by either a firm or a fiduciary. In fact, the first two...

... by allowing the appropriation to occur. See *id* This is clearly insufficient to address the **dynamic** concerns voiced above, since the "dangerous" type of renegotiation is precisely the kind that involves...

... suggests that the judicial ascertainment-of-fairness test should use a static, rather than **adynamic**, timeframe. See, e.g., ALI PCG, *supra* note 20, 5.02(a)(2)(A) (noting...

2/TI,KWIC/3 (Item 3 from file: 15)

DIALOG(R)File 15:(c) 2003 ProQuest Info&Learning. All rts. reserv.

#### **The constitutionality of legislative supermajority requirements: A defense**

...TEXT: between acts that govern the operations of a house of the legislature and those that **alter** the rights and duties of citizens outside the legislative branch. The former are within the...

... itself relies. In *Chadha*, the Court expressly contrasts legislative power, described as the power "of **altering** the legal rights [and] duties ... outside the Legislative Branch," with Congress's rulemaking authority, interpreted... To say that the legislature may pass irrepealable laws, is to say that it may **alter** the very constitution from which it derives its authority; since in so far as one...

... the Constitution has been interpreted to permit legislatures to enter into binding contracts and to **create** vested rights in "contract" and property that a subsequent legislature cannot impair. (110) But this authority specifically derives from... Our present budget crisis is in large measure a reflection of repeated instances of this **dynamic**. Legislators will trade votes to provide entitlements and other expenditure programs to numerous concentrated interest... penalties); 2 REDLICH, *supra*, at 203-14 (committees); 3 *id.* at 37-41 (order of **business** ).

7. **RULES**, *supra* note 1, House Rule XXI(5)(c).

8. Cf. *United States v. Ballin*, 144... that it passes. Any rule, such as the three-fifths rule, that forces Congress to **alter** this combination should thereby increase the opposition to Congress's financing and spending program and...

2/TI,KWIC/4 (Item 1 from file: 349)

DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

**EXTENDED WEB ENABLED MULTI-FEATURED BUSINESS TO BUSINESS COMPUTER SYSTEM FOR RENTAL VEHICLE SERVICES**  
**SYSTEME INFORMATIQUE INTERENTREPRISES A ELEMENTS MULTIPLES A ACCES INTERNET POUR SERVICES DE LOCATION DE VEHICULES**

Fulltext Availability:  
Detailed Description

Detailed Description  
... only have



access to its business partner, but also one or more competitors of its **business** partner through the same Internet portal. In this way, at least two needs are satisfied...46 serves as the electronic umbilical cord through which branch offices 44 communicate with the **business** computer system 36 of the invention.

Attached hereto as exhibits are functional descriptions of the...contract.

OPENRENTAL The customer has picked up a car and has opened a rental ticket/**contract** .

DIRECTBILLREQUEST

The customer has reserved or rented a car through Enterprise, and Enterprise is requesting that you confirm ...upon the status of the reservation/rental.

1) Click on any of the tabs to alter renter, vehicle, repair facility, and/or claim information.

2) Click Finish to complete your change...adjust or handling the file (Appendix, page 5).

Additional Charges - View additional charges on the rental **contract** (Appendix, page 7).

rentwelocar Offkfc B0076 01 A4uster ADAM.'Kms  
4512879624

g  
@4X@4  
M...

2/TI,KWIC/5 (Item 2 from file: 349)

DIALOG(R) File 349: (c) 2003 WIPO/Univentio. All rts. reserv.

**SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR A SUPPLY CHAIN MANAGEMENT  
SYSTEME, PROCEDE ET PRODUIT PROGRAMME INFORMATIQUE CONCUS POUR UNE GESTION  
DE CHAINE D'APPROVISIONNEMENT**

Fulltext Availability:  
Detailed Description  
Claims

Detailed Description

... lane and any minimum order quantities;

Figure 154 is a flowchart of a process for **creating a contract** utilizing a supply chain graphical user interface in accordance with an embodiment of the ...of the page presented upon selection of the Create Bid tab;

Figure 168 shows a **Create Bid** button;

Figure 169 illustrates a drop down list box from which a user can... entered into with the supply agreement having at least the following provisions: i) establishing a **contract price** for the good, and ii) requiring the selling supply chain participant to bill the...HTML page.

To date, Web development tools have been limited in their ability to create **dynamic Web** applications which span from client to server and interoperate with existing computing resources. Until...

...side problems by.

Improving performance on the client side;  
1 5 Enabling the creation of **dynamic**, real-time Web applications; and  
Providing the ability to create a wide variety of user ...the notion of  
client-side validation, offloading appropriate processing onto the client  
for improved performance.

**Dynamic**, real-time Web pages can be created. Using the above-mentioned  
custom UI components, **dynamic** Web pages can also be created.

Sun's Java language has emerged as an industry...

...as: "a simple, object-oriented, distributed, interpreted, robust,  
secure, architecture-neutral, portable, high-performance, multithreaded,  
**dynamic**,

buzzword-compliant, general-purpose programming language. Java supports  
programming for the Internet in the form...

...Java literature states that Java is basically, "C++ with extensions from  
Objective C for more **dynamic** method resolution."

Another technology that provides similar function to Java is provided by  
Microsoft and ActiveX Technologies, to give developers and Web designers  
wherewithal to build **dynamic** content for the Internet and personal  
computers. ActiveX includes tools for developing animation, 3-D...  
administrator to effectively manage and Simplicity,  
maintain security and access. Prevention

7. System does not **create** cost or incremental Cost  
effort for the supply chain community

8. Effective training and documentation...but it has the significant  
advantage of greatly increased security because an intruder could not  
**alter** the data showing that an intrusion has occurred. The disadvantage  
of this method is the...system snapshot as soon as one suspects that  
something is wrong. Many incidents cause a **dynamic** chain of events to  
occur, and an initial system snapshot may be the most valuable...  
complexity forces the need for an effective access policy to assure clear  
adherence to these **business rules**.

An access policy needs to define access rights and privileges to protect  
assets from loss...approach are.

The supply chain coordinator would only be able to have one set of  
**business rules**

apply to each user

Users would need to be managed centrally.

These shortfalls are especially...in a way matching their real-world  
business organization. Also presented is a way to **dynamically** manage  
the relationships between supplier, distributors, and retailers in place  
of a cross-reference method...

...different types of groups that may exist in the portal, with each one  
requiring different **business rules** for privilege assignment. An  
application function is needed to add a domain or remove a...developed  
community management functionality, a management interface to for  
granting privilege's is required.

#### Publication **Business Rules**

A supply chain member can grant access to retailers that belong to their  
group or...there may need to be a custom application I/O written to apply  
the following **business rules**.

When a new retail outlet is added, the application should check to see if that...

Claim

... and a landed cost associated with the distribution of the item. 145. A method for **creating** a contract utilizing a supply chain graphical user interface, comprising:

a) identifying a contract utilizing a graphical...

...graphical user interface; and

C) preventing the item from being associated with more than one **contract**. . A system for **creating** a contract utilizing a supply chain graphical user interface, comprising:

a) logic for identifying a contract utilizing...

...interface; and

C) logic for preventing the item from being associated with more than one **contract**. 147. A method for **creating** a bid proposal utilizing a supply chain graphical user interface, comprising:

a) displaying a graphical...global forecast from the outlets utilizing the network;

e) storing the feedback in memory;

f) **altering** the global forecast based on the feedback; and

g) managing the supply chain utilizing the...

...outlets

utilizing the network;

e) logic for storing the feedback in memory;

f) logic for **altering** the global forecast based on the feedback; and

g) logic for managing the supply chain...

2/TI,KWIC/6 (Item 3 from file: 349)

DIALOG(R) File 349: (c) 2003 WIPO/Univentio. All rts. reserv.

**EXTENDED WEB ENABLED MULTI-FEATURED BUSINESS TO BUSINESS COMPUTER SYSTEM FOR RENTAL VEHICLE SERVICES**  
**SYSTEME INFORMATIQUE ETENDU ENTRE ENTREPRISES, A FONCTIONS MULTIPLES, FONCTIONNANT SUR LE WEB, POUR DES SERVICES DE LOCATION DE VEHICULES**

Fulltext Availability:

Detailed Description

Detailed Description

... Page 61 of 246 8/11/00

ARMS Process Report

RENTAL LOCATION and the RENTAL**CONTRACT** /TICKET ID; or

RENTAL LOCATION and the RENTAL BRANCH RESERVATION ID.

Likewise, records may be...

2/TI,KWIC/7 (Item 4 from file: 349)

DIALOG(R) File 349: (c) 2003 WIPO/Univentio. All rts. reserv.

**METHOD AND APPARATUS PROVIDING CONVERGENT SOLUTION TO END-TO-END, ADAPTIVE**

**BUSINESS APPLICATION MANAGEMENT**  
**PROCEDE ET APPAREIL DONNANT UNE SOLUTION CONVERGENTE A UNE GESTION**  
**D'APPLICATION COMMERCIALE ADAPTATIVE, DE BOUT EN BOUT**

Fulltext Availability:  
Detailed Description

Detailed Description  
... after the second, etc.

In this case the customer has a more limited capability to alter the viewing sequence than can be achieved with VOD.

The wireless infrastructure, if used, can... In general, the service provisioning module 22 provides multi-service, data-driven provisioning through predefined **business rules** to enable new services to be quickly launched. Real-time activation and configuration can be... with the provisioning All Purpose Service (APS) module 42, an e-mail server 44, a **Dynamic** Host Configuration Protocol (DHCP) module 46 and an interactive content module 48. An interactive services... and business process automation through work flow management techniques. The business process automation also enables **business rules** (e.g., service activation) to be defined in a single location and shared between applications... capacity management, and service assurance. Service provisioning includes multi-service provisioning; data driven provisioning through **business rules** to allow quick new services launching; service provisioning rules independent of commercial packaging; real-time... telephone service, one for Internet service and one for television service) and a service provisioning **business rules** programming 150. The OSS area 82 further comprises a standard service design database 152 and... customer information (invoice address, payment method, banking information, services provided to be given customer) . A **contract** is created by the system at the moment of the first order, which means once the quotation... the Docl' software. The data objects include an input data definition data object 414, a **business rules** data object 416 and a layout structure data object 418. Fig. 13 G is a...

...data objects include the work order data object 356, the action data object 354, a **business rules** data object 424, and an events data object 426. In alternate embodiments, the various different...

2/TI,KWIC/8 (Item 5 from file: 349)  
DIALOG(R) File 349: (c) 2003 WIPO/Univentio. All rts. reserv.

**METHODS AND SYSTEMS FOR CREATING AND MANAGING CAPITAL ASSET BUSINESS EXCHANGE**  
**PROCEDES ET SYSTEMES PERMETTANT DE CREER ET DE GERER DES ECHANGES D'ACTIFS IMMOBILISES**

Fulltext Availability:

Detailed Description

Claims

English Abstract

...type of the capital asset involved in the transaction, creating a business entity (14), defining **business rules** and logic specific to the business entity to govern the transaction, and managing the transaction **dynamically** on an on-going basis to close the transaction successfully.

Detailed Description

... capital asset exchanges that 0 can adapt to any geography/ business practices by changing or **altering** the **business rules**. The input to FPTS is the **business rules** file, created by the Analyst Module and the user input through the actual contract for...

...also helps the business entity comply with local, state and federal rules and regulations.

A **Dynamic** Transaction Logic Module (DTLM), also referred to as a **Dynamic**

Transaction Flow Module of the FPTS, enables changing the transaction flow automatically or manually based...

...and/or transaction variables referenced and exchanged via the Internet.

The DTLM takes the compiled **business rules** and the information in the online **contract** document and **creates** an automated workflow that navigates itself. The DTLM navigates and maneuvers the transaction by understanding...

...based on the actual contract or built-in default timetables that are stored in the **business rules**.

An Optimization Module (OM), part of the FPTS, stores all given characteristics of I 0...involved in the capital asset transaction, creating a business entity and related sub-entities, defining **business rules** and logic specific to the business entity and the associated sub-entities to govern the...

...the computer. The system is configured to set up business entities and sub-entities, including **business rules** and parameters relating thereto, create rules of proxy, rules of interaction. and delegation, analyze transaction...

...on the parties' desired outcome, receive documentary evidence against transaction milestones, update the centralized database **dynamically** to reflect the current status of the transaction at any given time, and finally close...

...timeshare industry, ship industry, automobile industry, aircraft industry, and import/export industry, based on predefined **business rules** guidelines. The computer program comprises an analyst code segment, a rules file creation code segment, a **dynamic** transaction logic code segment, a privilege scheme code segment, an optimization code segment, a. semantic...43 is an exemplary embodiment of a flow chart identifying the process of creating the **dynamic** transaction flow;

. Figure 44 is an exemplary embodiment of a flow chart identifying the process...processes facilitate, for example, setting up a business entity

and associated sub-entities, capturing the **business rules**, and defining privileges in relation to business entity's objectives using a client system, automated...

...are created and appropriate relationships are established through proper linkages, process 10 includes defining 16 **business rules** specific to the business entity and the associated subentities. These **business rules** define how the transaction are conducted by the end user and processed by the system. Once the **business rules**, also known as business logic, are known, process 10 then includes managing 18 the capital asset procurement transactions on a non-going basis until... processes to complete the capital asset business exchanges/ transactions.

FPTS 40 utilizes several pre-defined **business rules** /guidelines/ criteria and checklists in closing transactions or asset business exchanges. The decision criteria, forms... a methodology to create and manage capital asset transactions based on pre-determined criteria and **business rules** established by the business entity. The architecture of system 40 and 100 as well as...

...modules are: an Analyst Module (AM) 160, a Rules File Creation Module (RFCM) 162, a **Dynamic** Transaction Logic Module (DTLM) 170, a Privilege Scheme Module (PSM), also referred to as a...

...a Semantic Questionnaire Module (SQM) 202 in addition to analyst module 160, Rules File Creation Module 162, **Dynamic** Transaction Logic Module 170, Privilege Scheme Module 180, Optimization Module 190, and Automatic File I...

...programming of FPTS 40 by analyst module 160 provides the ability to capture the fundamental **business rules**. While creating such rules, the basic and related business entities and sub-entities are created... For example, in a real estate transaction, analyst module 160 creates virtual offices and their **dynamic** work flow definitions for the real estate office, the mortgage office, and the inspection office...

...contract source outside the exchange. From this composite information, FPTS 40 creates and executes a **dynamic** automated workflow using **Dynamic** Transaction Logic Module (DTLM) 170 that incorporates all the tasks for the defined entities and...

...variables referenced and exchanged via the Internet.

As stated above, DTLM 170 accepts the compiled **business rules** and the information in the online **contract** document and creates an automated workflow that navigates itself. DTLM 170 navigates the transaction by understanding user controls... timeline is derived from the actual contract or built-in default timetables stored in the **business rules**.

In yet another exemplary embodiment, FPTS 40 adopts a Privilege Scheme to provide an elaborate... other capital asset exchanges that can adapt to any geography/ business practices by changing or altering the **business rules**.

The input to FPTS 40 is the **business rules** file, created by Analyst Module 160 and the user input through the actual contract for the transaction. The output of FPTS 40 is the transaction **Dynamic** Transaction Logic Module (DTLM) 170 enables changing the transaction flow I 0 automatically or manually..;

...and/or transaction variables referenced and exchanged via the Internet. DTLM 170 takes the compiled **business rules** and the information in the online **contract** document and creates an automated workflow that navigates itself. FPTS 40 recognizes dependent transactions on its own... Out of all the designated tasks, which tasks actually get assigned to an entity is **dynamically** determined by FPTS 40 based on contract input, user input, entity interaction and events happening...

...transaction 15 is ultimately determined by the chronology (due dates) of the tasks determined **dynamically** by the system based ... is an exemplary embodiment of a flow chart 710 identifying the process of creating the **dynamic** transaction flow. Based on the geography of work flow objects 712 and the terms and conditions established by the contracts 714, the FPTS determines transaction flow 716 **dynamically**. FPTS 40 also determines individual sub-tasks and sequence of events, and assigns projected completion... other capital asset exchanges that can adapt to any geography/ business practices by changing or **altering** the **business rules**. The input to FPTS 40 is the **business rules** file, created by analyst module 160 (shown in Figure 5) based on the actual contract...

#### Claim

... involved in  
the capital asset transaction;  
creating a business entity and related sub-entities;  
defining **business rules** and logic specific to the business entity and the associated  
0 sub-entities to govern the transaction; and  
managing the transactions **dynamically** on a regular basis for the business entity.

2 The method according to Claim 1...

...device, said server system further configured to: set up business entities and sub-entities including **business rules** and parameters relating to the business entities and sub-entities;  
create rules of proxy, rules...

...according to Claim 10 wherein said server system is further configured to capture the fundamental **business rules**.

12 A system according to Claim 10 wherein said server system is further configured... database and cross reference the transaction information against the business entities; develop transaction milestones and **dynamic** workflow based on parties' desired outcome;  
receive documentary evidence against transaction milestones and update the centralized database **dynamically** to reflect a current status of the transaction at any given time;  
and  
close the...

...27 The computer according to Claim 19 wherein the transaction milestones are developed based on **business rule** files and actual contracts relating to the transaction.

28 The computer according to Claim 19...

...automobile industry, an aircraft industry, and an import/export industry, based on pre-defined **business rules** guidelines, said computer program further comprises at least one of an analyst code

segment, a rules file creation code segment, **adynamic** transaction logic code segment, a privilege scheme code segment, an optimization code segment, an automatic...

...Claim 30 wherein the analyst code segment further comprises a code segment that:  
captures fundamental **business rules** after creating basic and related business entities and sub-entities;  
creates definitions of all privileges...in the transaction.  
5

40 The computer program as recited in Claim 30 wherein the **dynamic** transaction logic code segment further comprises a code segment that creates and executes **adynamic** automated workflow incorporating all the tasks for the defined entities and auto navigates the transaction...

...exchanged via the Internet.

41 The computer program as recited in Claim 40 wherein the **dynamic** transaction logic code segment further comprises a code segment that enables changing the transaction flow...

...inputs and transaction variables.

42 The computer program as recited in Claim 40 wherein the **dynamic** transaction logic code segment further comprises a code segment that:  
. receives compiled **business rules** and the information captured from an online contract document by executing at least one of...

...navigate the transaction.

0

43 The computer program as recited in Claim 40 wherein the **dynamic** transaction logic code segment further comprises a code segment that:  
executes a task;  
marks it...

**2/TI,KWIC/9 (Item 6 from file: 349)**

DIALOG(R) File 349: (c) 2003 WIPO/Univentio. All rts. reserv.

**ONLINE MEDIA EXCHANGE  
ECHANGE DE MEDIAS EN LIGNE**

Fulltext Availability:  
Detailed Description

English Abstract

...act as a continuous transactional exchange for electronic advertising. The system customizes paid advertising, enabling **dynamic** pricing and price discovery. The system provides extensive real-time tracking which supports a hybrid...

Detailed Description

... The Exchange environment - commoditizes the buying and selling of advertising because any party involved can alter its position at any time. For example, Advertisers with



accepted offers running on Publisher sites...

...commission is discovered. According to this view, publishers are considered as affiliates or as **adynamic** outsourced sales force for a advertiser/merchant. These affiliates or resellers are paid primarily by...

...have previously been static and long term. The exchange allows the affiliate relationship to be **dynamic**, and hence responsive to changing conditions in real-time.

Publisher/Affiliates can simultaneously have relationships with several merchants at the same time and can **dynamically** adjust these relationships to maximize their yield. Moreover, because the prices being paid are determined...

...commission is discovered. According to this view, publishers are considered as affiliates or as **adynamic** outsourced sales force for a advertiser/merchant. These affiliates or resellers are paid primarily by...

...have previously been static and long term. The exchange allows the affiliate relationship to be **dynamic**, and hence responsive to changing conditions in real-time.

Publisher/Affiliates can simultaneously have relationships with several merchants at the same time and can **dynamically** adjust these relationships to maximize their yield. Moreover, because the prices being paid are determined...market price.

One aspect of the present invention is a method and system providing **adynamic** real-time automated exchange for buying, selling and trafficking commoditized media while providing real time...to many exchange in accordance with an embodiment of this invention.

FIG. 14 illustrates how **dynamic** pricing influences impression volume and reach of an advertisement in accordance with an embodiment of...

...advertiser and the publisher. The second is to provide the automation necessary to have **adynamic** real-time negotiation system. This includes functions for filtering and matching the offers to the...an aggregated view of the responses from publishers. Based on the feedback, they can **dynamically** adjust the offer. For instance, they can modify their creative or change the incentives.

6...system's automated process of accepting and/or rejecting offers submitted to the exchange through **dynamic** configurable business rule definition and/or parameter selection.

One embodiment of the audience/content match @ndex method...

...automatically served by the system's ad servers 401.

Publishers may manually or automatically adjust parameters **dynamically** to bias the selection of advertisements (e.g.

give ads different priorities with a... This solution satisfies the three requirements defined at the beginning of this section.

### 5.3 **Dynamic** Trading

All of the system's trading is **dynamic** and real-time. The exchange system provides real-time reporting to both the advertisers and...

...increase gains in winning situations.

The ability to monitor the results immediately and change parameters **dynamically** allows on-the-fly testing of advertising. The effect of changes, such as different creatives...

...offers, and different incentives, can be tested and measured efficiently.

Ultimately, the instant monitoring and **dynamic** controls blur the line between ad testing and full ad runs; they are both the same.

The **dynamic** nature of the trading allows for automated testing of variables impacting the effectiveness of advertising...

...The resulting twenty-seven individual offers may be automatically generated and run for comparison.

Advertisers **dynamically** control their risk profile by adjusting their incentives (e.g. shifting payment from impression to... single metric for comparing similar offers with different incentive levels in the exchange.

### 5.8 **Dynamic** Control and Price Discovery

A feature of the present invention allows both the advertisers and...

...sell process. All accepted offers are monitored continuously by the system, and the results are **dynamically** updated. The raw data includes impressions served and events recorded. Other useful data, such as...

...performance of the accepted offer.

As described above, advertisers may monitor and modify their offers **dynamically**. If their offer is not being accepted by an adequate number of publishers, an advertiser...

...the exposure they get via price modifications.

FIG. 14 graphically depicts a simplified benefit of **dynamic** price control through the exchange system of the present invention. Horizontal lines represent advertiser incentives...

...conditions they want a particular ad accepted or discontinued. This allows a publisher to have **dynamic** control (whether manually or through automated processes) over the ads they accept and/or terminate...

...the price allows the market forces of supply and demand to come into play and **dynamically** determine the fair market value of the advertising media during any snapshot in time. Both...

...offer. This automation enables advertisers and publishers to engage in a higher volume of transactions. **Dynamic** monitoring and reporting provides the necessary controls to manage the increased volume effectively.

Feedback from advertising performance and automated yield management **dynamically** uses a process similar to natural selection to terminate offers that are under-performing. The...A meeting place for advertisers and publishers for the purpose of establishing a (temporary and **dynamic** ) affiliate relationship.

2. Trading 'Hub: facilitates serving of banners and tracking of all ad-related...thereof d) accepting by the publisher of one or more of the ordered offers; e) **creating** an instantaneous 'liquid contract' for the accepted offer; f) serving the media content for the contracted offer to the...the placed offers based on information provided by each of the plurality of publishers and **creating** an instantaneous contract between 15- an advertiser and a publisher when the publisher accepts an offer placed by...

...media through the low cost Of entering/exiting contracts, combined with the ability to constantly **alter** creative aspects of advertising campaigns.

It will be recognized by those skilled in the art...

2/TI,KWIC/10 (Item 7 from file: 349)  
DIALOG(R) File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

TECHNOLOGY SHARING DURING ASSET MANAGEMENT AND ASSET TRACKING IN A  
NETWORK-BASED SUPPLY CHAIN ENVIRONMENT AND METHOD THEREOF  
PARTAGE TECHNOLOGIQUE LORS DE LA GESTION ET DU SUIVI DU PARC INFORMATIQUE  
DANS UN ENVIRONNEMENT DU TYPE CHAINE D'APPROVISIONNEMENT RESEAUTEE, ET  
PROCEDE ASSOCIE

Fulltext Availability:

## Detailed Description Claims

### Detailed Description

... the detailed flow of control within the program to the framework. This approach allows the **creation** of more complex systems that

23

Thus, as is explained above, a framework basically is...interface problems.

24

To date, Web development tools have been limited in their ability to **create dynamic** Web applications which span from client to server and interoperate with existing computing resources.  
Until...

...LTI) components. Custom "wldgets" (e.g., real-time stock tickers, animated icons, etc.) can be **created**, and client-side performance is improved. Unlike HTML, Java supports the notion of client-side...

...for Java, code named "Uakarta." ActiveX Technologies also includes ActiveX Server Framework, allowing developers to **create** server applications. One of ordinary skill in the art readily recognizes that ActiveX could be...and real-time delivery requirements. The next generation networks should also have the ability to **dynamically** reconfigure the network so that it can guarantee a predetermined amount of bandwidth for the...is limited bases on a user profile. Preferably the user profile is included in a **rules** database. By locating the user profile within the rules database, the rules database can provide...a progressive stipulation of various control requirements by WAF participants) to evolve into forms of **business** that are the most efficient, competitive and useful.

WAF provides capabilities that rationalize the support...or a member server for collecting demographic information on customers. These

156

servers contain the **business rules** defined by the seller, e.g., what credit cards are accepted and what customer information...

...to be instantiated in the applications. The net result of this approach is that the **business rules** (from the application servers) are embedded into the applications along with the application logic or...the insurance contract is mailed to the client. The underwriter can decide to cancel or **alter** the contract. Alternatively, the underwriting function is carried out before the contract is printed and...profile. The answers to the frequently asked questions could include answers automatically generated from a **dynamic** knowledge base or a knowledge expert. Also optionally, the step of coordinating the transmission of...

...mail based on a text pattern. The received electronic mail could be stored in a **dynamic** customer interaction database. The plurality of templates for publishing data in various forms may include...subscribe third parties to selected services.

### FREQUENTLY ASKED QUESTIONS

Displays static answers to popular questions

**Dynamically** generates questions and answers from a knowledge base

Tracks knowledge experts based on content authors...

...a component for displaying static answers to popular questions.

The questions and answers could be **dynamically** generated from a knowledge base. Optionally, the questions and answers could be ranked in order...

...IN REAL TIME

Provides public and private messages  
Provides Collaborative Web touring, URL pasting  
Allows **dynamic** (public/private) room creation  
Notifies users if another user is on-line  
201  
Provides free...

...invention may notify a user when another user is online. Further, chat rooms could be **dynamically** created which could restrict access to known users or could permit open public access. Moderated...

...customer interaction histories

Queties messages in mailboxes for response  
Facilitates review and response process  
202

**DYNAMIC** RENDERING

Displays content and applications based on profile  
Pufis content from multiple data sources: static, database, third party site  
Matches content to users via configurable **business rules**  
Allows custom template based publishing  
The content channels component of the present invention also provides...

...and. third party sites. Optionally, the content may be inatched to particular users via configurable **business rules** .

ADMINISTRATIVE AND FINANCIAL WEB APPLICATION SERVICES

Another embodiment of the present invention is provided for...6802. The user is allowed to select the item for purchase. See operation 6803.

205

**DYNAMICALLY** FACILITATE COMMUNITIES OF INTEREST

Provides static content and applications to people with similar preferences or business needs Provides **dynamic** content and applications to people with similar preferences or business needs  
Communities can be created by configurable **business rules**  
5 The customer relationship management component of the present invention, in operation 6702, provides statie content and applications to people with similar preferences and business needs. **Dynamic** content is provided, as are applications, to people with similar preferences and business needs.

MATCH:...

...legacy databases and inforrnation to personal profile information  
Content matching rules are defined by configurable **business rules**  
Uses metadata and **business rules** to match content to profiles  
The customer relationship management component of the present invention permits...

...based on their profiles is also permitted. Optionally, content matching rules are defined by configurable **business rules** . In the alternative, metadata and **business rules** match

## CUSTOMER FEEDBACK AND SURVEYS

Automates creation and administration of online feedback fon-ns...

## Claim

... Capat@,17,1,@ (Real-time) ir U(\$AectivpempfimfMiligngm7)ti Tools

Marketifig

nent r ina

9**DynamiCally**Facili7tate Corten geme

ti Techriciogy Target Mes zeril C.! Mana Regi3terfor

Capabilities (01 nd em...NETWORK

Figure 94

90/129

9300

Figure 93

9004

Equivalent 9508

ltemi

Product

Comparison

9510

**Dynamic**

Pricing

9512

Product Search

----- 9514

Product

Sampling

9516

customer 9504

Product

Configuration

9502

Information lnformauon...z

0

PRODUCTS GRAPHIC

10104

Figure 101

10200

SITE NAVIGATION

wwwwJ

10202

DCA1

STATIC CONTENT

**DYNAMIC**

CONTENT

AREAS

10204

DCA2

@/ 10206

DCA3

Figure 102

HTML TEMPLATE

95/129

MONITORING OPERATION OF...

...COMMERCE SYSTEM

10408

MANAGING CONTACT INFORMATION RECEIVED FROM USERS OF  
THE E-COMMERCE SYSTEM

10410

ALTERING THE ITEMS BASED ON PROFILES OF THE USERS OF  
THE E-COMMERCE SYSTEM  
Figure 104...

...INFORMATION ABOUT A PRODUCT FOR SALE

10704

RECEIVING AN ORDER FOR PURCHASE OF THE PRODUCT  
**DYNAMICALLY** GENERATING A PRICE OF THE PRODUCT FOR SALE 10706  
BASED ON THE ACTUAL PRICE OF...

2/TI,KWIC/11 (Item 8 from file: 349)

DIALOG(R) File 349: (c) 2003 WIPO/Univentio. All rts. reserv.

SCHEDULING AND PLANNING BEFORE AND PROACTIVE MANAGEMENT DURING MAINTENANCE  
AND SERVICE IN A NETWORK-BASED SUPPLY CHAIN ENVIRONMENT  
PROGRAMMATION ET PLANIFICATION ANTICIPEE, ET GESTION PROACTIVE AU COURS DE  
LA MAINTENANCE ET DE L'ENTRETIEN D'UN ENVIRONNEMENT DU TYPE CHAINE  
D'APPROVISIONNEMENT RESEAUTEE

Fulltext Availability:

Detailed Description  
Claims

Detailed Description

... and services;

Figure 57 is an illustration of one embodiment of the present invention  
for **creating** a hierarchy of the features of the items selected in  
accordance with the customer's...and

24

To date, Web development tools have been limited in their ability to  
create **dynamic** Web applications which span from. client to server and  
interoperate with existing computing resources.

Until...

...the client-side problems by.

Improving performance on the client side;  
Enabling the creation of **dynamic**, real-time Web applications; and  
Providing the ability to create a wide variety of user...

...the notion of client-side validation, offloading appropriate processing  
onto the client for improved performance. **Dynamic**, real-time Web

25

can also be created.

Sun's Java language has emerged as...

...Java literature states that Java is basically, "C++  
with extensions from Objective C for more **dynamic** method resolution."  
Another technology that provides similar function to JAVA is provided by  
Microsoft and...it over optical fiber. SONET is multiplexed at the byte  
level, allowing services to be **dynamically** placed into the broadband  
STS for transport. The basic SONET of 64 Kbps per byte...and real-time  
delivery requirements. The next generation networks should also have the  
ability to **dynamically** reconfigure the network so that (inverted  
exclamation mark) it can guarantee a predetermined amount of...teriris of  
user traffic, and its growth is slated to continue exponentially. This  
phenomenon has **created** a dilemma for traffic planners and engineers of

the Core network. They have seen traffic...server or a member server for collecting demographic information on customers. These servers contain the **business rules** defined by the seller, e.g., what credit cards are accepted and what customer information...

...to be instantiated in the applications. The net result of this approach is that the **business rules** (from the application servers) are embedded into the applications along with the application logic or... profile. The answers to the frequently asked questions could include answers automatically generated from a **dynamic** knowledge base or a knowledge expert. Also optionally, the step of coordinating the transmission of...subscribe third parties to selected services.

#### FREQUENTLY ASKED QUESTIONS

Displays static answers to popular questions

**Dynamically** generates questions and answers from a knowledge base

Tracks knowledge experts based on content authors...

...for response. All or selected messages may be stored to build a customer interaction history.

#### DYNAMIC RENDERING

Displays content and applications based on profile

Pulls content from multiple data sources: static, database, third party site

Matches content to users via configurable **business rules**

Allows custom template based publishing

The content channels component of the present invention also provides...

...and third party sites. Optionally, the content may be matched to particular users via configurable **business rules**.

#### ADMINISTRATIVE AND FINANCIAL WEB APPLICATION SERVICES

Another embodiment of the present invention is provided for...accounting magazine. It might also compare what similar IT professionals from accounting firms purchased.

#### DYNAMICALLY FACILITATE COMMUNITIES OF INTEREST

Provides static content and applications to people with similar preferences or business needs Provides **dynamic** content and applications to people with similar preferences or business needs

Communities can be created by configurable **business rules**

The customer relationship management component of the present invention, in operation 6702, provides static content and applications to people with similar preferences and business needs.

**Dynamic** content is provided, as are applications, to people with similar preferences and business needs.

#### MATCH...

...legacy databases and information to personal profile information  
Content matching rules are defined by configurable **business rules**

196

Uses metadata and **business rules** to match content to profiles

The customer relationship management component of the present invention permits...

...on their profiles is also permitted. Optionally, content matching rules are defined by configurable **business rules**. In the alternative, metadata and **business rules** match content to profiles. Also optionally, legacy databases and information may be related to personal



...

Claim

... and pricing in the network-based supply chain at predeter-  
mined intervals;  
469  
and  
(e) **altering** the items based on profiles of the users of the  
network-based supply chain.

23...by an  
Imperativas interna (inverted exclamation mark) user community.  
B2. The application requires an advanced,  
**dynamic**, and integrated user interface  
for expert users.  
B3. Session performance is critical (inverted exclamation mark...z  
w 0  
z  
0  
PRODUCTS GRAPH  
10104  
Figure 101  
10200,,@-@@  
SITE NAVIGATION  
10202  
DCA1  
**DYNAMIC** STATIC CONTENT  
CONTENT  
AREAS  
10204  
DCA2  
10206  
DCA3  
Figure 102  
HTML TEMPLATE  
MONITORING OPERATION OF...

...COMMERCE SYSTEM  
10408  
MANAGING CONTACT INFORMATION RECEIVED FROM USERS OF  
THE E-COMMERCE SYSTEM  
10410  
**ALTERING** THE ITEMS BASED ON PROFILES OF THE USERS OF  
THE E-COMMERCE SYSTEM  
Figure 104...  
...INFORMATION ABOUT A PRODUCT FOR SALE  
10704  
RECEIVING AN ORDER FOR PURCHASE OF THE PRODUCT  
**DYNAMICALLY** GENERATING A PRICE OF THE PRODUCT FOR SALE 10706  
BASED ON THE ACTUAL PRICE OF...

2/TI,KWIC/12 (Item 9 from file: 349)  
DIALOG(R) File 349: (c) 2003 WIPO/Univentio. All rights reserved.

NETWORK AND LIFE CYCLE ASSET MANAGEMENT IN AN E-COMMERCE ENVIRONMENT AND  
METHOD THEREOF  
GESTION D'ACTIFS DURANT LE CYCLE DE VIE ET EN RESEAU DANS UN ENVIRONNEMENT  
DE COMMERCE ELECTRONIQUE ET PROCEDURE ASSOCIEE

Fulltext Availability:  
Detailed Description  
Claims

#### Detailed Description

... be used to manage an enterprise's content; Figure 102 illustrates an exemplary template with three **Dynamic** Content Areas (DCAs) embedded within the template in accordance with a method of associating a... Language (SGML).

To date, Web development tools have been limited in their ability to create **dynamic** Web applications which span from client to server and interoperate with existing computing resources.

Until...

...the client-side problems by.

Improving performance on the client side;  
Enabling the creation of **dynamic**, real-time Web applications; and  
Providing the ability to create a wide variety of user...

...notion of client-side validation, offloading

24

appropriate processing onto the client for improved performance. **Dynamic**, real-time Web pages can be created. Using the above-mentioned custom UI components, **dynamic** Web pages can also be created.

Sun's Java language has emerged as an industry...

...as: "a simple, object-oriented, distributed, interpreted, robust, secure, architecture-neutral, portable, high-performance, multithreaded, **dynamic**, buzzword-compliant, general-purpose programming language. Java supports programming for the Internet in the form of...

...states that Java is basically, "C++ 1.5 with extensions from Objective C for more **dynamic** method resolution." Another technology that provides similar function to JAVA is provided by Microsoft and ActiveX Technologies, to give developers and Web designers where-withal to build **dynamic** content for the Internet and personal computers. ActiveX includes tools for developing animation, 3-D...it over optical fiber. SONET is multiplexed at the byte level, allowing services to be **dynamically** placed into the broadband STS for transport. The basic SONET of 64 Kbps per byte...and real-time delivery requirements. The next generation networks should also have the ability to **dynamically** reconfigure the network so that it can guarantee a predetermined amount of bandwidth for the...the MNS market.

Business Strategy - Companies may look to the present invention for assistance in creating a business strategy for entering the NINS market. Typically, this type of engagement will define...terms of user traffic, and its growth is slated to continue exponentially. This phenomenon has created a dilemma for traffic planners and engineers of the Core network. They have seen traffic...into through the use of WAF can be enforced reliably. These agreements may have both "dynamic" transaction management related aspects, such as content usage control information enforced through budgeting, metering, and...server or a member server for collecting demographic information on customers. These servers contain the **business rules** defined by the seller, e.g., what credit cards are accepted and what customer information...

...to be instantiated in the applications. The net result of this approach is that the **business rules** (from the application servers) are embedded into the applications along with the application logic or...

...the insurance contract is mailed to the client. The underwriter can decide to cancel or **alter** the contract. Alternatively, the underwriting function is carried out before the contract is printed and...schemes, and different certification around the world. In addition, there are a wide variety of **business** processes that dictate how a Point of Sale (POS) terminal queries a user for data...

#### Claim

... be used only by an imperatives internal user community.

52 The application requires an advanced, **dynamic**, and integrated user interface for expert users.

B3. Session performance is critical to the application...NETWORK

Figure 94

90/129

9300

Figure 93

9004

Equivalent 9508

Item!

Product

Comparison 9510

#### **Dynamic**

Pricing

9512

Product Search -N@-/

9514

Product

Sampling

9516

Customer

Product 9504

Configuration

9502 Information...

...product Products configured  
hoices geared to to the individual  
known/static Dynamiclautomated  
demographics in nature

#### **Dynamic**

Figure 100

94/129

10102 10106

CONTENT CATALOG

Z

2 x

Z

HTMLPAGES INFORMATION

Z...

...PRODUCTS GRAPH

10104  
 Figure 101  
 10200  
 SITE NAVIGATION @D Z3 ZJ  
 10202  
 DCA1  
 STATIC CONTENT  
**DYNAMIC**  
 CONTENT  
 AREAS  
 10204  
 DCA2  
 10206  
 DCA3  
 Figure 102  
 HTIVIL TEMPLATE  
 95/129  
 MONITORING OPERATION OF...  
 ...COMMERCE SYSTEM  
 10408  
 MANAGING CONTACT INFORMATION RECEIVED FROM USERS OF  
 THE E-COMMERCE SYSTEM  
 10410  
**ALTERING**THE ITEMS BASED ON PROFILES OF THE USE  
 THE E-COMMERCE SYSTEM  
 Figure 104  
 96...  
  
 ...INFORMATION ABOUT A PRODUCT FOR SALE  
 10704  
 RECEIVING AN ORDER FOR PURCHASE OF THE PRODUCT  
**DYNAMICALLY**GENERATING A PRICE OF THE PRODUCT FOR SALE 10 06  
 BASED ON THE ACTUAL PRICE...

2/TI,KWIC/13 (Item 10 from file: 349)  
 DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

COLLABORATIVE CAPACITY PLANNING AND REVERSE INVENTORY MANAGEMENT DURING  
 DEMAND AND SUPPLY PLANNING IN A NETWORK-BASED SUPPLY CHAIN ENVIRONMENT  
 AND METHOD THEREOF  
 PLANIFICATION EN COLLABORATION DES CAPACITES ET GESTION ANTICIPEE DES  
 STOCKS LORS DE LA PLANIFICATION DE L'OFFRE ET DE LA DEMANDE DANS UN  
 ENVIRONNEMENT DE CHAINE D'APPROVISIONNEMENT FONDEE SUR LE RESEAU ET  
 PROCEDE ASSOCIE

Fulltext Availability:  
 Detailed Description  
 Claims

Detailed Description

... used to manage an enterprise's content; Figure 102 illustrates an  
 exemplary template with three**Dynamic**Content Areas (DCAs) embedded  
 within the template in accordance with a method of associating a...

...accordance with one embodiment of the  
 present invention;  
 Figure 128 is a flowchart illustrating a**contract**negotiation in  
 accordance with one embodiment  
 of the present invention;

Figure 129 is a flowchart...the programmer's code is called only when the framework needs it (e.g., to create or manipulate a proprietary data structure).

A programmer writing a framework program not only relinquishes...and  
23

To date, Web development tools have been limited in their ability to create **dynamic** Web applications which span from client to server and interoperate with existing computing resources.

Until...

...the client-side problems by.

Improving performance on the client side;  
Enabling the creation of **dynamic**, real-time Web applications; and  
Providing the ability to create a wide variety of user...

...the notion of client-side validation, offloading appropriate processing onto the client for improved performance. **Dynamic**, real-time Web pages can be created. Using the above-mentioned custom UI components, **dynamic** Web pages can also be created.

Sun's Java language has emerged as an industry...

...as: "a simple, object-oriented, distributed, interpreted, robust, secure, architecture-neutral, portable, high-performance, multithreaded, **dynamic**, buzzwordcompliant, general-purpose programming language. Java supports programming for the Internet in the form of...

...provided by Microsoft and ActiveX Technologies, to give developers and Web designers wherewithal to build **dynamic** content for the Internet and personal computers. ActiveX includes tools for developing animation, 3-D ...it over optical fiber. SONET is multiplexed at the byte level, allowing services to be **dynamically** placed into the broadband STS for transport. The basic SONET of 64 Kbps per byte...

...stream through the use of modified AddDrop Multiplexers (ADM). The SONET ring topology permits the **creation** of highly survivable networks which are viewed in the communications industry as essential for obtaining... and real-time delivery requirements. The next generation networks should also have the ability to **dynamically** reconfigure the network so that it can guarantee a predetermined amount of bandwidth for the...into through the use of WAF can be enforced reliably, These agreements may have both "**dynamic**" transaction management related aspects, such as content usage control information enforced through budgeting, metering, and...server or a member server for collecting demographic information on customers. These servers contain the **business rules** defined by the seller, e.g., what credit cards are accepted and what customer information...to be instantiated in the applications. The net result of this approach is that the **business rules** (from the application servers) are embedded into the applications along with the application logic or...

...the insurance contract is mailed to the client. The underwriter can decide to cancel or **alter** the contract. Alternatively, the underwriting function is carried out before the contract is printed and...a product, service, or promotion. The invention sends leads, notices, and  
184

#### AUCTION CAPABILITIES

Facilitates **dynamic** auction creation

Allows private and public auctions

Supports multiple auction formats (e.g. Dutch, Reserve...profile. The answers to the frequently asked questions could include answers automatically generated from a **dynamic** knowledge base or a knowledge expert. Also optionally, the step of coordinating the transmission of...

...mail based on a text pattern. The received electronic mail could be stored in a **dynamic** customer interaction database. The plurality of templates for publishing data in various forms may include...third parties to selected services.

#### FREQUENTLY ASKED QUESTIONS

193

Displays static answers to popular questions

**Dynamically** generates questions and answers from a knowledge base

Tracks knowledge experts based on content authors...

...for displaying static answers to popular questions.

Yi

The questions and answers could be **dynamically** generated from a knowledge base. Optionally, the questions and answers could be ranked in order...

#### ...REAL TIME

Provides public and private messages

Provides Collaborative Web touring, URL pasting

Allows **dynamic** (public/private) room creation

Notifies users if another user is on-line

Provides free forin...

...invention may notify a user when another user is online. Further, chat rooms could be **dynamically** created which could restrict access to known users or could permit open public access. Moderated...

...for response. All or selected messages may be stored to build a customer interaction history.

#### DYNAMIC RENDERING

Displays content and applications based on profile

Pulls content from multiple data sources: static, database, third party site

Matches content to users via configurable **business rules**

Allows custom template based publishing

The content channels component of the present invention also provides...

...and third party sites. Optionally, the content may be matched to particular users via configurable **business rules**.

#### ADMINISTRATIVE AND FINANCIAL WEB APPLICATION SERVICES

195

Another embodiment of the present invention is provided...data of a plurality of users is managed and organized in operation 6700. Static and **dynamic** information 15 of interest is provided to each user based on profile data of that user in operation 6704. Further, static and **dynamic** information of interest is provided to a plurality of users having similar profile data in...

...some accounting magazine. It might also compare what similar IT professionals from accounting firms purchased.

#### **DYNAMICALLY FACILITATE COMMUNITIES OF INTEREST**

Provides static content and applications to people with similar preferences or business needs Provides **dynamic** content and applications to people with similar preferences or business needs

Communities can be created by configurable **business rules**

The customer relationship management component of the present invention, in operation 6702, provides static content and applications to people with similar

preferences and business needs. **Dynamic** content is provided, as are applications, to people with similar preferences and business needs.

MATCH...

#### **Claim**

... products services) Availability) WI-time) I (Active Profding@) Tools I Marketing  
 ,tej Content agement  
 gm **Dynamically** Fadli  
 Push Technj-Vy I F-R;;eter to  
 trl II es  
 ,:41"o`u...be used only by an  
 Imperatives internal user community.  
 B2. The application requires an advanced,  
 **dynamic** , and integrated user interface  
 for expert users.  
 B3. Session performance is critical to the  
 application...

#### **...NETWORK**

Figure 94  
 90/130  
 9300  
 Figure 93  
 9004  
 Equivalent 9508  
 Item/  
 Product  
 Comparison  
 9510

#### **Dynamic**

@Pricing  
 9512  
 Product Search  
 9514  
 Product  
 Sampling  
 9516  
 Customer 9504  
 Product  
 Configuration  
 9502  
 Information Information...Figure 101  
 10200  
 SITE NAVIGATION E:1 I  
 ..j Z@.j  
 10202  
 DCA1

STATIC CONTENT

**DYNAMIC**

CONTENT

AREAS

10204

DCA2

10206

DCA3

Figure 102

HTML TEMPLATE

95/130

MONITORING OPERATION OF...

...COMMERCE SYSTEM

10408

MANAGING CONTACT INFORMATION RECEIVED FROM USERS OF  
THE E-COMMERCE SYSTEM

10410

**ALTERING**THE ITEMS BASED ON PROFILES OF THE USERS OF  
THE E-COMMERCE SYSTEM

Figure 104...

...INFORMATION ABOUT A PRODUCT FOR SALE

10704

RECEIVING AN ORDER FOR PURCHASE OF THE PRODUCT

**DYNAMICALLY**GENERATING A PRICE OF THE PRODUCT FOR SALE 10706  
BASED ON THE ACTUAL PRICE OF...

2/TI,KWIC/14 (Item 11 from file: 349)

DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

**METHOD FOR AFFORDING A MARKET SPACE INTERFACE BETWEEN A PLURALITY OF  
MANUFACTURERS AND SERVICE PROVIDERS AND INSTALLATION MANAGEMENT VIA A  
MARKET SPACE INTERFACE**

**PROCEDE DE MISE A DISPOSITION D'UNE INTERFACE D'ESPACE DE MARCHE ENTRE UNE  
PLURALITE DE FABRICANTS ET DES FOURNISSEURS DE SERVICES ET GESTION  
D'UNE INSTALLATION VIA UNE INTERFACE D'ESPACE DE MARCHE**

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... used to manage an enterprise's content; Figure 102 illustrates an  
exemplary template with three**Dynamic**Content Areas (DCAs) embedded  
within the template in accordance with a method of associating a...  
Language (SGML).

To date, Web development tools have been limited in their ability to  
create**dynamic**Web applications which span from client to server and  
interoperate with existing computing resources.  
Until...

...the client-side problems by.

Improving performance on the client side;

Enabling the creation of**dynamic**, real-time Web applications; and  
Providing the ability to create a wide variety of user...notion of  
client-side validation, offloading

25



appropriate processing onto the client for improved performance. **Dynamic**, real-time Web pages can be created. Using the above-mentioned custom UI components, **dynamic** Web pages can also be created.

Sun's Java language has emerged as an industry...

...as: "a simple, object-oriented, distributed, interpreted, robust, secure, architecture-neutral, portable, high-performance, multithreaded, **dynamic**, buzzwordcompliant, general-purpose programming language. Java supports programming for the Internet in the foriii of...

...Java literature states that Java is basically, "C++ with extensions from Objective C for more**dynamic** method resolution." Another technology that provides similar fiinction to JAVA is provided by Microsoft and ActlveX Technologies, to give developers and Web designers wherewithal to build**dynamic** content for the Internet and personal computers. ActlveX includes tools for developing animation, 3-D...it over optical fiber. SONENT is multiplexed at the byte level, allowing services to be**dynamically** placed into the broadband STS for transport. The basic SONENT of 64 Kbps per byte...and real-time delivery requirements. The next generation networks should also have the ability to**dynamically** reconfigure the network so that it can guarantee a predetermined amount of bandwidth for the...capabilities (e.g. global number transparency, utilization of web based information, rich media communications) 'II **create** new services for IP enabled ...into through the use of WAF can be enforced reliably. These agreements may have both "**dynamic**" transaction management related aspects, such as content usage control information enforced through budgeting, metering, and...server or a member server for collecting demographic information on customers. These servers contain the**business rules** defined by the seller, e.g., what credit cards are accepted and what customer information...

...to be instantiated in the applications. The net result of this approach is that the**business rules** (from the application servers) are embedded into the applications along with the application logic or...the insurance contract is mailed to the client, The underwriter can decide to cancel or**alter** the contract, Alternatively, the underwriting function is carried out before the **contract** is printed and mailed. In this system, the terminals operate on-line, underwriting is performed...

Claim

... used only by an  
Imperatives internal user corn.munity.  
B2. The application requires an advanced,  
**dynamic**, and integrated user interface  
for expert users.  
B3. Session performance is critical to the  
application...OVER THE NETWORK

Figure 94

9300

Figure 93

9004

Equivalent 9508

Item/

Product

Comparison

9510

**Dynamic**

Pricing  
9512  
Product earc  
9614  
Product  
Sampling  
9516  
Customer 9504  
Prod I  
configuuration  
95012  
In...

...GRAPHI  
10104  
Figure 101  
10200  
SITE NAVIGATION ---I\* E:::  
JIT E:  
10202  
DCA1  
STATIC CONTENT  
**DYNAMIC**  
CONTENT  
AREAS  
1 0204  
DCA2  
J 10206  
DCA3  
Figure 102  
HTML TEMPLATE  
MONITORING OPERATION OF...

...COMMERCE SYSTEM  
10408  
MANAGING CONTACT INFORMATION RECEIVED FROM USERS OF  
THE E-COMMERCE SYSTEM  
10410  
**ALTERING**THE ITEMS BASED ON PROFILES OF THE USERS OF  
THE E-COMMERCE SYSTEM  
Figure 104...  
...ABOUT A PRODUCT FOR SALE  
10704  
RECEIVING AN ORDER FOR PURCHASE OF THE PRODUCT  
I  
**DYNAMICALLY**GENERATING A PRICE OF THE PRODUCT FOR SALE 10706  
BASED ON THE ACTUAL PRICE OF...

2/TI,KWIC/15 (Item 12 from file: 349)  
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ORGANIZATION OF INFORMATION TECHNOLOGY FUNCTIONS  
ORGANISATION DE FONCTIONS DE TECHNOLOGIE DE L'INFORMATION

Fulltext Availability:  
Detailed Description

Detailed Description

... System (DNS) services are  
ided to devices within an enterprise. This function includes maintaining  
provi

**Dynamic**Host Configuration Protocol (DHCP) address leasing and DNS/DDNS  
(domain name system/**dynamic**domain name system) addresses, leasing or  
1 5 assigning addresses, resolving IP name and address...

...This function manages the network addresses consumption strategy. This  
will provide network address ranges for**dynamic**(DHCP) or static  
(hard-coding) address assignment. The static address management will be  
used to...production environment. A change is defined as anything  
(hardware, software, system components) that will ultimately**alter**  
and/or affect the production environment. As shown in FIG. 7, change  
control 51 and...development team, the negotiators, and the key business  
issues to protect in 1 5 the**contract**. □Contract creation□develops  
the**contract**template based upon previous contracts or from an  
aggregate of generally accepted contract provisions. Key exhibits are  
identified and developed by both the vendor and customer.**Contract**  
**creation**includes appropriate documentation on Statement of Work and/or  
Product Acquisition, as well as appropriate...

...issues, privacy issues, security issues, etc. Content legal risk  
identification reviews content types (textual information, **dynamic**  
HTML, audio, video, graphics, database driven content, etc.) to determine  
the legal risks associated with...tracks progress, identifies training  
needs, and balances individual personal objectives with the needs of the  
**business** .

Career**guidance**and counseling provides a formal counseling  
relationship to enhance perfori-nance, and is supplemented by...

2/TI,KWIC/16 (Item 13 from file: 349)  
DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

**A SYSTEM, METHOD FOR FIXED FORMAT STREAM COMMUNICATION IN A COMMUNICATION  
SERVICES PATTERNS ENVIRONMENT**  
**SYSTEME, PROCEDE ET ARTICLE POUR FLUX DE FORMAT FIXE DANS UN ENVIRONNEMENT  
A CONFIGURATIONS DE SERVICES DE COMMUNICATION**

Fulltext Availability:  
Detailed Description  
Claims

Detailed Description

... invention-,  
Figure 180 illustrates a Batching Retrievals and Dependency;  
1 8  
Figure 181 illustrates the**Dynamically**Setting Dependency;  
Figure 182 illustrates a flowchart for a method for sending a single  
message...Language (SGML).

To date, Web development tools have been limited in their ability to  
created**dynamic**Web applications which span from client to server and  
interoperate with existing computing resources.  
Until...

...the client-side problems by.

Irriproving performance on the client side;

Enabling the creation of **dynamic** , real-time Web applications; and  
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...Java literature states that Java is basically, "C++ with extensions from Objective C for more **dynamic** method resolution." Another technology that provides similar function to JAVA is provided by Microsoft and ActiveX Technologies, to give developers and Web designers wherewithal to build **dynamic** content for the Internet and personal computers. ActiveX includes tools for developing animation, 3-D...learn": as people live and work in them over time, those people will seek to alter the building in subtle, or not so subtle, ways.

Also, when architects design a building...Provide new architecture frameworks needed today to meet you're a user's client's **business** needs.

Provide **guidance** to define what architecture best meets you're a user's client's business needs...probably be limited to a few key business partners.

112. The application requires an advanced, **dynamic** , and integrated user interface for expert users.

State of the art 4GL and 3GL development...is split between the client and the server on a permanent basis; there is no **dynamic** distribution of application logic.

The number of tiers in NCC and traditional client/server systems...Is it object oriented or structured procedural language?

Does the tool support programming extensions to **Dynamic** Link Libraries?

What are the debugging capabilities of the tool?

Is the tool scalable?

The...use programming scripts and objects to apply multiple style sheets to Web pages to create **dynamic** content. CSS can also be used to centralize control of layout attributes for multiple pages within a Web site, thus avoiding the tedious process of changing each page individually.

**DynamicHTML**: Dyn-o-mite!

HTML's simplicity soon began to limit authors who demanded more advanced multimedia and page design capabilities. Enter **DynamicHTML** DHTML As an extension of HTML, DHTML allows Web pages to function more like...

...manipulation. In contrast, Netscape's implementation of DHTML in Communicator 4.0 uses a proprietary "**Dynamic**Layers" tag, which assigns multiple layers to a page within which objects are manipulated. As...

...properly using  
the other's browser. XML: X marks the spot

HTML 4.0 and **DynamicHTML** have given Web authors more control over the ways in which a Web page...has moved from simple text-based documents that included headings, bulleted lists, and hyperlinks to **dynamic** pages that support rich graphic images and virtual reality. So what next for the Web...

...83

Netscape LiveWire and LiveWire Pro - visual tool suite designed for building and managing complex, **dynamic** Web sites and creating live online applications.

Symantec Visual Café - the first complete Rapid Application...add functionality to Web pages. These controls can be written to add new features like **dynamic** charts, animation or audio.

Implementation considerations

Viewers and plug-ins are some of the most **dynamic** segments of the browser market due to quickly changing technologies and companies. What was yesterday...used to build custom synchronization tools.

Are changes in data usage anticipated?

Data can be **dynamically** changed to accommodate changes in how the data is used.

98

Is it desirable to...

...more of the three ownership models: Primary site ownership - data is owned by one site; **Dynamic** site ownership - data owned by one site, however site location can change; and Shared site...can provide additional communications services that may be required by the applications. Additional services included **dynamic** message routing, guaranteed delivery, broadcasting, queuing, and priority delivery. These common services are usually provided...

...required in an environment with many physical servers or in an environment that is very **dynamic**. It is important to note that location transparency may not be provided by all middleware...level compatibility among directory systems.

Another helpful feature to look out for is support for **dynamic** IP addressing via DHCP. This lets the router handle the process of sharing a small number of IP addresses among the members of the workgroup. Support for **dynamic** IP addressing is now part of Windows 95 and Macintosh System 7.6, among other...and development may be required.

Guaranteed Delivery

Store and Forward

Queuing

132

Priority Message Delivery

**Dynamic** Routing

Multicasting and Broadcasting

Load Balancing

Product considerations

What are the client's budgetary constraints...Programming Interface (API)

Publish and subscribe (broadcasting)

Microsoft Windows client product with support for DLLs (**Dynamically** Linked libraries),

Visual Basic, and Power Builder development environments

Message recovery on all BEA MessageQ...

#### Claim

... implemented in the following ways:

For some network protocols (e.g., IP), routers draw upon **dynamic** routing information to switch packets to the appropriate path. This capability is especially important when...network.)

The following IETF standard supports interoperability among security systems: IPSec Allows two nodes to **dynamically** agree on a security association based on keys, encryption, authentication algorithms, and other parameters for...

...ask a central resource for the node-s network address (e.g., IP address):

DHCP (**Dynamic** Host Configuration Protocol)

BootP (Bootstrap Protocol)

Quality of Service 2414

1 5 Different types of...ranging from PCs to mainframes. Monitors also scale by allowing new machines to be added **dynamically** to the system.

Adding additional nodes in the production cycle is one TP monitor strength...to pass anything, carries to

pass binary (sound, video), strings to pass strings

FML allows **dynamic** messages to be sent/received

Automatic error logging for Tuxedo components (ULOG, tagent log)

Application...machine code (executable code) at runtime.

203

Possible Product Options

VBRUN300-DLL

VBRUN300.DLL - runtime **Dynamic** Link Library that supports programs written in Visual Basic.

Virtual Machine 2706

Typically, a Virtual...data, as well as simple calculations associated with field display. In addition, logic associated with **dynamically** changing the display (e.g., a checkbox entry causes a field to become disabled) is...processes the report profile and specific distribution requirements and deten-nines the report to be **created**. It then passes control to the report execution process.

Report Execution (2902)

Report execution is...necessary information (e.g., documents, data, forms, applications, etc.) to the next step in the

#### Rule Management

A **business** process workflow is typically composed of many different roles and routes. Decisions must be made...to be assigned to a large pool, a complex method of assigning priorities, an extremely **dynamic** environment, or some other reason. Another advantage to work scheduling is that the system can...

...out that the underlying Netcentric architecture is particularly well suited for enabling the packaging of **Business** Logic as components.

245

Business Logic is the core of any application, providing the expression of **business** rules and procedures (e.g., the steps and rules that govern how a sales order is fulfilled). As such, the **Business** Logic includes the control structure that specifies the flow for processing **business** events and user requests. There are many ways in which to organize **Business** Logic, including: ☐ rules ☐ -based, object-oriented, components, structured programming, etc. however each of these techniques include, although perhaps...

...Architecture Framework.  
 Interface Logic (3302)  
 Interface logic interprets and maps the actions of users into **business** logic processing activities. With the assistance of Presentation Services, Interface logic provides the linkage that...

...flow of processing within the application.  
 Application Logic (b2504)  
 Application Logic is the expression of **business rules** and procedures (e.g., the steps and rules that govern how a sales order is...

...such, the Application Logic includes the control structure that specifies the flow for processing for **business** events and user requests. The isolation of control logic facilitates change and adaptability of the...

...of information, further insulating the  
 provi  
 application from physical information storage considerations. The developers of **business** logic should be shielded from the details and complexity of other architecture services (e.g...

...will be separate from the presentation logic and the database access logic. Today separation of **business** logic into its own tier is often done using an application server. In this type of an environment, although some **business rules** such as field validation might still be tightly coupled with the presentation logic, the majority...

...is separate, usually residing on the server. It is also important to decide whether the **business** logic should be packaged as components in order to maximize software re-use and to streamline software distribution. Another factor to consider is how the **business** logic is distributed between the client and the server(s) - where the **business** logic is stored and where the business logic is located when the application ...logic can be stored on the server(s) and executed on the server(s); (2) **business** logic can be stored on the server(s) and executed on the client; (3) business...

...4) some business logic can be stored and executed on the server(s) and some **business** logic can be stored and executed on the client; etc.  
 Having the business logic stored...

...with the sharing of and reliance on central data across many users.  
 247  
 If the **business** logic is stored and executed on the client, software distribution options must be considered. Usually...

...the thin-client model. However, as technology evolves, this balance is beginning to shift, allowing **business** logic code bundled into components to be either downloaded at runtime or permanently stored on...

...is often done using an application server. In this type of an environment, although some **business rules** such as field validation might still be tightly coupled with the presentation logic, the majority ...Estimating, planning, and managing iteration  
 Organizing and managing to achieve reuse of both architecture and **business** logic

Netcentric Patterns Overview  
 Netcentric Patterns focus on application frameworks  
 Netcentric Patterns focus on how to design...flow of a business process by requesting services in a specific sequence according to specific

**business rules** (i.e., conditional statements). The services being requested are generally offered by entity-centric Business...

...may create an invoice. The control logic 3702 (i.e., the sequence of steps and **business rules**) associated with the billing process is encapsulated within the Billing component itself The Billing component...

...Components, but it also triggers Fraud Analysis 3704, a processcentric Business Component, if a specific **business rule** is satisfied. Note also that "Step 6" is performed within the Billing component itself. Perhaps...Reusable Making it possible to quickly Making it possible to assemble an assemble unique and **dynamic** application at a fraction of the cost solutions from existing because eight of the twelve

...as:

- a long maintenance life
- complex processing or significant asynchronous logic
- complex data relationships
- very **dynamic** business requirements
- multiple access channels
- legacy evolution or replacement
- functionality common across multiple applications

Firm...complexity of applications often chosen for component-based projects. Component technology's technical characteristics enable **dynamic**, functionally complex systems. For example, business reengineering can capitalize on the inherent flexibility of component-based systems. However, reengineering creates more **dynamic** functional requirements, thereby increasing risk. Not to mention that business reengineering is itself a risky...minimal impact to the application itself. Reusable. Making it easy to quickly assemble unique and **dynamic** solutions from reusable components.

337

Component-based development ...The team and leadership must then be very participatory and flexible to adapt to the **dynamic** requirements. One large engagement defined separate, overlapping ownership responsibility for:

Windows

Domain object model sub-systems...sections of documentation need updating. This process may help ensure that the publishing model is **dynamic** and current.

Many Users and Multiple Locations

Solution Centers and engagements often have many users...usable as it stands. In addition, it has been extended to perform "Java Loader-like"

**dynamic** linking if the proper code cannot be found already within the factory.

Factory, the well...hot pastrami. This situation can be avoided with proper workflow, or with sufficient structure, a **dynamic** library loading version of the Abstraction Factory could, in effect, tell the parking meter how...filters can be combined together and wrapped by a larger-grained filter; filters can be **dynamically** assembled at run-time depending on some context, etc.

Filters

At a high level, there...the message request.

Benefits

Performance. Because there is no time spent on look-ups or **dynamic** translation of the message, performance is better than with other variations of Stream-Based Communication...related classes. This could be used with the Bridge pattern to retrieve the fori-nat **dynamically** based on non-static information.

Alternatives



Self-Describing Stream. This pattern is a specific implementation...

2/TI,KWIC/17 (Item 14 from file: 349)  
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SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR LOAD BALANCING REQUESTS AMONG  
SERVERS

SYSTEME, PROCEDE ET ARTICLE POUR EQUILIBREUR DE CHARGE DANS UN  
ENVIRONNEMENT DE STRUCTURES DE SERVICES

Fulltext Availability:  
Detailed Description

Detailed Description

... the present  
invention;  
Figure 180 illustrates a Batching Retrievals and Dependency;  
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...Java literature states that Java is basically, "C++  
with extensions from Objective C for moredynamicmethod resolution."  
Another technology that provides similar function to JAVA is provided by  
Microsoft and ActiveX Technologies, to give developers and Web designers  
wherewithal to builddynamiccontent for the Internet and personal  
computers. ActiveX includes tools for developing animation, 3-D...learn":  
as people live and work in them over time, those people will seek to  
alterthe building in subtle, or not so subtle, ways.

Also, when architects design a building...Provide new architecture  
frameworks needed today to meet you're a user's client'sbusiness  
needs.

Provideguidanceto define what architecture best meets you're a user's

client's business needs...probably be limited to a few key business partners.

B2. The application requires an advanced, **dynamic** , and integrated user interface for expert users.

State of the art 4GL and 3GL development...is split between the client and the server on a permanent basis; there is no **dynamic** distribution of application logic.

The number of tiers in NCC ...Tiered or multi-tiered Architectures  
Three-tiered architecture describes a distributed application architecture in which **business** applications are separated into three logical components: presentation and control, application logic, and data management...

...prioritization - The use of a transaction manager enables servers to be added, removed, or restarted **dynamically** . This allows for very robust, scaleable, and flexible applications.

#### Disadvantages

Three-tier architectures are highly...Win32 A-PI or its equivalent on other platforms using a C language compiler, most **business** application development is done using higher level development languages such as Visual Basic or

67...Is it object oriented or structured procedural language?

Does the tool support programming extensions to **Dynamic** Link Libraries?

What are the debugging capabilities of the tool?

Is the tool scalable?

The...use programming scripts and objects to apply multiple style sheets to Web pages to create **dynamic** content. CSS can also be used to centralize control of layout attributes for multiple pages within a Web site, thus avoiding the tedious process of changing each page individually.

#### **Dynamic**HTML: Dyn-o-mite!

HTML's simplicity soon began to limit authors who demanded more advanced multimedia and page design capabilities. Enter **Dynamic**HTML DHTML As an extension of HTML, DHTML allows Web pages to function more like...

...manipulation. In contrast, Netscape's implementation of DHTML in Communicator 4.0 uses a proprietary "**Dynamic**Layers" tag, which assigns multiple layers to a page within which objects are manipulated. As...

...properly using

the other's browser. XML: X marks the spot

HTML 4.0 and **Dynamic**HTML have given Web authors more control over the ways in which a Web page...has moved from simple text-based documents that included headings, bulleted lists, and hyperlinks to **dynamic** pages that support rich graphic images and virtual reality. So what next for the Web...

...82

Netscape LiveWire and LiveWire Pro - visual tool suite designed for building and managing complex, **dynamic** Web sites and creating live online applications.

Symantec Visual Café - the first complete Rapid Application...add functionality to Web pages. These controls can be written to add new features like **dynamic** charts, animation or audio.

Implementation considerations

Viewers and plug-ins are some of the most **dynamic** segments of the browser market due to quickly changing technologies and companies. What was yesterday...used to build custom synchronization tools.

Are changes in data usage anticipated?

Data can be **dynamically** changed to accommodate changes in how the data is used.

97

Is it desirable to...

...more of the three ownership models: Primary site ownership - data is owned by one site; **Dynamic** site ownership - data owned by one site, however site location can change; and Shared site...can provide additional communications services that may be required by the applications. Additional services included **dynamic** message routing, guaranteed

110

delivery, broadcasting, queuing, and priority delivery. These common services are usually...

...required in an environment with many physical servers or in an environment that is very **dynamic**. It is important to note that location transparency may not be provided by all middleware...level compatibility among directory systems.

Another helpful feature to look out for is support for **dynamic** IP addressing via DHCP. This lets the router handle the process of sharing a small number of IP addresses among the members of the workgroup. Support for **dynamic** EP addressing is now part of Windows 95 and Macintosh System 7.6, among other...and development may be required.

Guaranteed Delivery

Store and Forward

Queuing

131

Priority Message Delivery

**Dynamic** Routing

Multicasting and Broadcasting

Load Balancing

Product considerations

What are the client's budgetary constraints...Programming Interface (API)

Publish and subscribe (broadcasting)

Microsoft Windows client product with support for DLLs (**Dynamically** Linked libraries),

Visual Basic, and Power Builder development environments

Message recovery on all BEA MessageQ...COM standard is partly a specification and partly an implementation. The specification defines mechanisms for **creation** of objects and communication between objects.

This part of the specification is paper-based and...implemented in the following ways.

For some network protocols (e.g., IP), routers draw upon **dynamic** routing

information to switch packets to the appropriate path. This capability is especially important when...network.)

The following IETF standard supports interoperability among security systems.

IPSec Allows two nodes to **dynamically** agree on a security association based on keys, encryption, authentication algorithms, and other parameters for...

...ask a central resource for the node's network address (e.g., IP address).

DHCP (**Dynamic** Host Configuration Protocol)

BootP (Bootstrap Protocol)

Quality of Service 2414

Different types of network traffic (e...ranging from PCs to mainframes.

Monitors also scale by allowing new machines to be added **dynamically** to

the system. Adding additional nodes in the production cycle is one TP

monitor strength...to pass anything, arrays to

pass binary (sound, video), strings to pass strings

FML allows **dynamic** messages to be sent/received

Automatic error logging for Tuxedo components (ULOG, tagent log)

Application...machine code (executable code) at runtime.

202

Possible Product Options

VBRUN300.DLL

VBRUN300.DLL - runtime **Dynamic** Link Library that supports programs written in Visual Basic.

Virtual Machine 2706

Typically, a Virtual...data, as well as simple calculations associated

with field display. In addition, logic associated with **dynamically** chan

ing the display (e.g., a checkbox entry

91

causes a field to become...documents, data, forms, applications, etc.) to the next step in the work flow as needed.

**Rule** Management

A **business** process workflow is typically composed of many different roles and routes. Decisions must be made...

...messages or even triggers based on specific events.

Are cooperative applications present?

Will there be **business** process re-engineering?

Is the business process well defined?

If rules or conditions can be identified which define the **business** process, with few exception conditions, workflow tools can then automate areas such as information routing...are shorter time to market and quicker response times.

Are multiple people involved in the **business** process?

Is there a need for work scheduling?

task.

Do integration issues exist?

It is...

...as components.

244

Business Logic is the core of any application, providing the expression of **business** rules and procedures (e.g., the steps and rules that

govern how a sales order is...

...for processing business events and user requests. There are many ways in which to organize **BusinessLogic**, including.

**rules** -based, object-oriented, components, structured programming, etc. however each of these techniques include, although perhaps...

...flow of processing within the application.

Application Logic (b2504)

Application Logic is the expression of **business rules** and procedures (e.g., the steps and rules that govern how a sales order is...

...such, the Application Logic includes the control structure that specifies the flow for processing for **business** events and user requests. The isolation of control logic facilitates change and adaptability of the application to changing **business** processing flows.

Data Abstraction (b2506)

Information Access Services isolate the **BusinessLogic** from the technical specifics of how information is stored (e.g., location transparency, RDBMS...

...view of information, further insulating the application from physical information storage considerations.

The developers of **business** logic should be shielded from the details and complexity of other architecture services (e.g...

...is often done using an application server. In this type of an environment, although some **business rules** such as field validation might still be tightly coupled with the presentation logic, the majority ...

...is separate, usually residing on the server. It is also important to decide whether the **business** logic should be packaged as components in order to maximize software re-use and to streamline software distribution.

Another factor to consider is how the **business** logic is distributed between the client and the server(s) - where the business logic is **business** logic can be stored and executed on the client; etc.

Having the business logic stored...

...code; thereby eliminating the need to distribute software to client machines when changes to the **business** logic occur. If all the **business** logic executes on the server, then the application on the client will make requests to...

...is often done using an application server. In this type of an environment, although some **business rules** such as field validation might still be tightly coupled with the presentation logic, the majority ... a thing, which happens in the world, and the rule which tells us how to create that thing, and when one must create it. It is both a process and a ... flow of a business process by requesting services in a specific sequence according to specific **business rules** (i.e., conditional statements). The services being requested are generally offered by entity-centric Business...

...may create an invoice. The control logic 3702 (i.e., the sequence of

steps and **business rules** ) associated with the billing process is encapsulated within the Billing component itself The Billing component...

...but it also triggers Fraud Analysis 3704, a process-@ centric Business Component, if a specific **business rule** is satisfied. Note also that "Step 6" is performed within the Billing component itself Perhaps... Reusable Making it possible to quickly Making it possible to assemble an assemble unique and **dynamic** application at a fraction of the cost solutions from existing because eight of the twelve...

2/TI,KWIC/18 (Item 15 from file: 349)

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**SYSTEM, METHOD, AND ARTICLE OF MANUFACTURE FOR AN EXCEPTION RESPONSE TABLE IN ENVIRONMENT SERVICES PATTERNS**  
**SYSTEME, PROCEDE ET ARTICLE DE PRODUCTION DESTINES A UNE TABLE DE REPOSE D'EXCEPTION DANS DES CONFIGURATIONS DE SERVICES D'ENVIRONNEMENT**

Fulltext Availability:  
Detailed Description

Detailed Description

... validator association diagram;  
Figure 131 illustrates a validation rule class diagram;  
Figure 132 illustrates a **rule** validation interaction diagram;  
14  
Figure 133 illustrates a flowchart for a method for assigning a...  
invention;  
Figure 180 illustrates a Batching Retrievals and Dependency;  
1 8  
Figure 181 illustrates the **Dynamically** Setting Dependency;  
Figure 182 illustrates a flowchart for a method for sending a single  
message...Language (SGML).  
To date, Web development tools have been limited in their ability to  
create **dynamic** Web applications which span from client to server and  
interoperate with existing computing resources.

Until...

...the client-side problems by.

Improving performance on the client side;  
Enabling the creation of **dynamic** , real-time Web applications; and  
Providing the ability to create a wide variety of user...

...the notion of client-side validation, offloading appropriate processing onto the client for improved performance. **Dynamic** , real-time Web pages can be created. Using the above-mentioned custom UI components, **dynamic** Web pages can also be created.

Sun's Java language has emerged as an industry...

...a simple, object-oriented, distributed, interpreted, robust, secure, architecture-neutral, portable, high-perfor-nance, multithreaded, **dynamic** , buzzwordcompliant, general-purpose programming language. Java supports programming for the Internet in the form of...

...Java literature states that Java is basically, "C++ with extensions from Objective C for more **dynamic** method resolution."

Another technology that provides similar function to JAVA is provided by Microsoft and ActiveX Technologies, to give developers and Web designers wherewithal to build **dynamic** content for the Internet and personal computers. ActiveX includes tools for developing animation, 3-D...learn": as people live and work in them over time, those people will seek to **alter** the building in subtle, or not so subtle, ways.

Also, when architects design a building...technologies.

Provide new architecture frameworks needed today to meet you're a user's client's **business** needs.

Provide **guidance** to define what architecture best meets you're a user's client's business needs...probably be limited to a few key business partners.

B2. The application requires an advanced, **dynamic**, and integrated user interface for expert users.

State of the art 4GL and 3GL development...is split between the client and the server on a permanent basis; there is no **dynamic** distribution of application logic.

The number of tiers in NCC and traditional client/server systems...prioritization - The use of a transaction manager enables servers to be added, removed, or restarted **dynamically**. This allows for very robust, scaleable, and flexible applications.

#### Disadvantages

Three-tier architectures are highly...Is it object oriented or structured procedural language?

Does the tool support programming extensions to **Dynamic** Link Libraries?

What are the debugging capabilities of the tool?

Is the tool scalable?

The...use programming scripts and objects to apply multiple style sheets to Web pages to create **dynamic** content. CSS can also be used to centralize control of layout attributes for multiple pages within a Web site, thus avoiding the tedious process of changing each page individually.

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...manipulation. In contrast, Netscape's implementation of DHTML in Communicator 4.0 uses a proprietary "**Dynamic**Layers" tag, which assigns multiple layers to a page within which objects are manipulated. As...

...properly using

the other's browser. XML: X marks the spot

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Viewers and plug-ins are some of the most **dynamic** segments of the browser market due to quickly changing technologies and companies. What was yesterday...used to build custom synchronization tools.

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Data can be **dynamically** changed to accommodate changes in how the data is used.

98

Is it desirable to...

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III

delivery, broadcasting, queuing, and priority delivery. These common services are usually...

...required in an environment with many physical servers or in an environment that is very **dynamic**. It is important to note that location transparency may not be provided by all middleware...level compatibility among directory systems.

Another helpful feature to look out for is support for **dynamic** IP addressing via DHCP. This lets the router handle the process of sharing a small number of IP addresses among the members of the workgroup. Support for **dynamic** IP addressing is now part of Windows 95 and Macintosh System 7.6, among other...and development may be required.

Guaranteed Delivery

Store and Forward

Queuing

132

Priority Message Delivery

**Dynamic** Routing

Multicasting and Broadcasting

Load Balancing

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...ask a central resource for the node's network address (e.g., IP address).

DHCP (**D**ynamic **H**ost Configuration Protocol)

BootP (**B**ootstrap Protocol)

Quality of Service 2414

Different types of network traffic (e...ranging from PCs to mainframes. Monitors also scale by allowing new machines to be added **dynamically** to the system. Adding additional nodes in the production cycle is one TP monitor strength...to pass anything, arrays to pass binary (sound, video), strings to pass strings  
FML allows **dynamic** messages to be sent/received  
Automatic error logging for Tuxedo components (ULOG, tagent log)  
Application...code (executable code) at runtime.

203

Possible Product Options

VBRUN300.DLL

VBRUN300.DLL - runtime **D**ynamic Link Library that supports programs written in Visual Basic.

Virtual Machine 2706

Typically, a Virtual...data, as well as simple calculations associated with field display. In addition, logic associated with **dynamically** changing the display (e.g., a checkbox entry causes a field to become disabled) is...documents, data, forms, applications, etc.) to the next step in the work flow as needed.

#### **Rule** Management

A **business** process workflow is typically composed of many different roles and routes. Decisions must be made...items to consider include E-mail, database, GUI tool, PC applications, other office systems, and **business** applications.

How scaleable is the product?

243

Number of workers the product could reliably support...

...as components.

245

Business Logic is the core of any application, providing the expression of **business rules** and procedures (e.g., the steps and rules that govern how a sales order is...

...As such, the Business Logic includes the control structure that specifies the flow for processing **business** events and user requests. There are many ways in which to organize **Business** Logic, including.

**rules** -based, object-oriented, components, structured programming, etc. however each of these techniques include, although perhaps...

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Information Access Services isolate the **Business Logic** from the technical specifics of how information is stored (e.g., location transparency, RDBMS...

...view of information, further insulating the application from physical information storage considerations.

The developers of **business logic** should be shielded from the ... details and complexity of other architecture services (e.g., information services, component services), and other **business logic** for that matter. .

It is important to decide whether the business logic will be...

...is often done using an application server. In this type of an environment, although some **business rules** such as field validation might still be tightly coupled with the presentation logic, the majority ...

...logic is located when the application is being executed. There are many ways to distribute **business logic**: (1) **business logic** can be stored on the server(s) and executed on the server(s); (2...

...is often done using an application server. In this type of an environment, although some **business rules** such as field validation might still be tightly coupled with the presentation logic, the majority ...flow of a business process by requesting services in a specific sequence according to specific **business rules** (i.e., conditional statements). The services being requested are generally offered by entity-centric Business...

...may create an invoice. The control logic 3702 (i.e., the sequence of steps and **business rules** ) associated with the billing process is encapsulated within the Billing component itself The Billing component...

...Components, but it also triggers Fraud Analysis 3704, a processcentric Business Component, if a specific **business rule** is satisfied. Note also that "Step 6" is performed within the Billing component itself Perhaps...Reusable Making it possible to quickly Making it possible to assemble an assemble unique and **dynamic** application at a fraction of the cost solutions from existing because eight of the twelve...

2/TI,KWIC/19 (Item 16 from file: 349)

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METHOD FOR BUY-SIDE BID MANAGEMENT

## TECHNIQUE DE GESTION POUR ACHETEURS/VENDEURS

Fulltext Availability:  
Detailed Description

### Detailed Description

... rest of the code handling the communication session in any way. This independence will allow **dynamic** extension of the system by addition of new message objects without affecting any operational code...do not result in browser page reload. For that purpose the client application 30 shows **dynamically** generated HTML views of server application entities. When the state of a view changes and...documents received through the provi  
system. The proposal management platform has proposal filters which apply **business rules** to filter in only the types of RFI/RFP documents the supplier wishes to consider...

...business relationships. Users can store, sort, analyze and reuse current and past contracts. Buyers can **create a** contract and use information exchanged during the bid solicitation process as a Statement of Work (SOW ...are allocated relative to the complete bid solicitation document. The weights of higher levels are **dynamically** computed by the system from the weights allocated to lower levels. The weight allocation algorithm... owner advises bidders of the solicitation in Step 1701, he should not be able to **alter** the bid solicitation document. Any changes to the solicitation after release to the bidders should...

2/TI,KWIC/20 (Item 17 from file: 349)  
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A SYSTEM, METHOD, AND ARTICLE OF MANUFACTURE FOR PHASE DELIVERY OF COMPONENTS OF A SYSTEM REQUIRED FOR IMPLEMENTATION OF TECHNOLOGY  
SYSTEME, PROCEDE ET ARTICLE MANUFACTURE DESTINES A LA FOURNITURE PAR PHASES DE COMPOSANTS D'UN SYSTEME NECESSAIRES A L'APPLICATION D'UNE TECHNIQUE

Fulltext Availability:  
Detailed Description

### Detailed Description

... 1.8 transactions. Business I echeck server verifies digital signatures,  
processes checks according to the **business rules** of the bank (e.g. a check over \$25,000 requires two signatures), returns invalid...

...Tools.

EmbeddedJava Application Environment  
JavaBeans Development Kit  
JavaBlend  
Java Compiler Compiler  
Java Development Kit  
Java **Dynamic** Management Kit (JDMK)  
JavaHelp  
Java Management API (JMAPI)  
Java JIT Compiler  
Java SDK  
Java WorkShop...business selling over the  
Internet. SellerProduct1 allows for the enforcement of trading  
partner agreements and **business rules** . SellerProduct1

provides the capability to create company-specific catalogs which can be set up to...

...an order management system, and rapid customization of a site's business processes through modifiable **business rules** and presentation templates.

Search capabilities, including hierarchical menus, parametric searches by attribute, and simple keyword...the client-side problems by.

Improving performance on the client side;  
Enabling the creation of **dynamic**, real-time Web applications; and  
Providing the ability to create a wide variety of user...  
...the notion of client-side validation, offloading appropriate processing onto the client for improved performance.

**Dynamic**, real-time Web pages can be created. Using the above-mentioned custom UI components, **dynamic** Web pages can also be created.

Sun's Java language has emerged as an industry...

...as: "a simple, object-oriented, distributed, interpreted, robust, secure, architecture-neutral, portable, high-performance, multithreaded, **dynamic**, buzzword-compliant, general-purpose programming language.

Java supports programming for the Internet in the form...

...Java literature states that Java is basically, "C++ with extensions from Objective C for more **dynamic** method resolution."  
Another technology that provides similar function to JAVA is provided by Microsoft and ActiveX Technologies, to give developers and Web designers wherewithal to build **dynamic** content for the Internet and personal computers. ActiveX includes tools for developing animation, 3-D... required. This generally means establishing a contract with the vendor and following up that the **contract** is respected.

As the relationship between the Environment Management team and external vendors becomes less...however, as the resulting model is at best only partial, as an object model has **dynamic** aspects to it as well as static relationships, and may not correctly reflect the analysis...static part of the object model and does not contain any of the transient or **dynamic** aspects. The physical data model may also change significantly (for DB optimization), further confusing the issue...object oriented or a structured procedural language?

142

Does the tool support programming extensions to **Dynamic** Link Libraries?

What are the debugging capabilities of the tool?

c) Will the tool be...

...support is a requirement. Are separate windows painted for each language or are window literals **dynamically** replaced? The former will produce windows that are more visually appealing but requires more significant... however, as the resulting model is at best only partial, as an object model has **dynamic** aspects to it as well as static relationships, and may not correctly reflect the analysis...and the source code generating the error can be viewed simultaneously.

Other features include.

**Dynamicsyntax** checking, improving productivity by detecting errors as they are made, rather than at compile...range from simple paint packages to highly complex multi-layered animation graphics packages. The images **created** by these tools may be pixel-based (bitmaps) or vector-based, each with their own...

...image is defined by formulae rather than pixel position) offer much smaller file sizes, and **dynamic** image re-sizing, while producing excellent print quality, but cannot easily handle shading and color...Load this data into the appropriate Test Execution tools  
Automate the test  
Such tools included **dynamic** analyzers and execution logs. The Test Execution platform may differ from the development platform if...

2/TI,KWIC/21 (Item 18 from file: 349)  
DIALOG(R) File 349: (c) 2003 WIPO/Univentio. All rts. reserv.

**SOFTWARE TOOL FOR MANAGEMENT OF TIMESHARE PROPERTIES**  
**OUTIL LOGICIEL POUR LA GESTION DE MULTIPROPRIETES**

Fulltext Availability:  
Detailed Description  
Claims

Detailed Description

... week blocks or "increments" wherein each increment may be owned by a timeshare owner. The **dynamic** nature of the timeshare industry, however, demands that any inventory management tool be able to...as usage rights are implemented as discussed above. The policies, however, are defined in a **business rules** engine that is associated with the Tool.

Preferably, the usage rights and policies definition operations...

Membership

Membership is an optional or mandatory enhancement sold in conjunction with a widget. Memberships **alter** the usage right of the standalone widget. For example, the widget purchased alone may have...in drop down data windows,  
For operations 1810 - 1850, the lists of available search criteria is **dynamically** updated based on the previously selected search criteria.  
For example, after a resort is specified...purchased.

The contract inventory selection operations are preferably available to the user when a new **contract** is ☐ created ☐ so that inventory availability is confirmed as soon as possible. Generally, contract inventory selection includes...

Claim

... Module  
Define Sales and Hotel  
Inventory  
215  
V  
Associate Sales Inv t  
to Products to **create**  
Product Inventory

220

ContractInventory  
Selection (Sales)

- - - - -I

255 V 225

!Generate Resolved 0

24

245

Run predictive Usage...

2/TI,KWIC/22 (Item 19 from file: 349)

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**ELECTRONIC MUSIC/MEDIA DISTRIBUTION SYSTEM**  
**SYSTEME DE DISTRIBUTION ELECTRONIQUE DE MUSIQUE/MEDIA**

Fulltext Availability:  
Detailed Description  
Claims

English Abstract

...The system facilitates continued control over the musical content (110) sent to consumers (114) by **dynamically** enforcing retailer agreements and restrictions governing the purchase, use and distribution of the content. The...

Detailed Description

... the Internet. The system facilitates continued control over the musical content sent to consumers by **dynamically** enforcing retailer agreements and restrictions governing the purchase, use, and distribution of the content. The...

...module for certifying and distributing retail offers for the musical content where the offers are **dynamically** updated by electronic contracts between the retailers and distributors of the music. To do this ...

...from the Retail Web Site and play and store the music locally while enforcing the **business rules** governing the purchase arrangement. The Reference Service I 1 6 validates and certifies the retailer...or consumer.

Along with every song or other unit of musical content, the distributor provides **business rules** which govern the use, sale and distribution of the content. **Business rules** for a particular piece of content may include price range, conditions of sale and duration...

...an offer. The retailers then create offers and payment options consistent with the distributor's **business rules** for the sale and distribution to consumers. The retailers also prepare promotional materials to promote...from the Retail Web Site and play and store the music locally while enforcing the **business rules** governing the purchase arrangement. The Reference Service I 1 6 validates and certifies the retailer...distributor creates multimedia content based on the original music.

The distributor creates and electronically encodes **business rules** for how the content can be distributed and consumed. Examples of such rules are "This...supported by the Retailer.

The content with supplementary information including rendition, description, and rights data (**business rules**, default offer) are packaged and stored in secure containers.

A secure container is the minimum...

- ...can create 10 individual one-song MOB secure containers each with its own supplementary data, **business rules** and default offer, and also a ten-song GOB secure container with rendition, description, **business rules** and the default offer for the entire album. The distributor can also choose to package...
- ...staged for distribution. At step 232 (Fig. 2), the secure containers with content, supplemental data, **business rules** and the default offer, are stored in a Digital Asset Management database at the Delivery ...
- ...necessary for the processing carried out by each module. At step 230, the rights data (**business rules** and secure containers with the default offer without retailer identification) are sent to Reference Service...
- ...references. Any promotional materials are also sent to the retailers. A selection of the content **business rules** relevant to creating offers is sent to full-featured retailers. If necessary, unique commercial conditions...
- ...The retailer registers the Retail Tools with the Registration Manager (step 414).

The Production System creates an E-contract based on the contractual agreement between the retailer and distributor (step 416). The E-contract ...to sell content from that distributor. Based on the contract, the distributor (via Production Systems) creates an electronic contract (E@contract) which is a set of rules against which the retailer's unique offers...

- ...offers on available content subject to its contracts with the distributors and subject to the **business rules** associated with the specific content. A Retail Offer includes rules governing how consumers can acquire...provided with the Offer Creation Tools with the RMS and the 15 content-specific **business rules** received from the distributor which are used to provide a template to fill out the offer's conditions which will be automatically checked against the **business rules**. The retailer can create multiple or different offers for the same content. The retailer or...
- ...The Reference Service checks the "Candidate Offer" against the E-contract and the content-specific **business rules**. If the offer is consistent with the offer and the rules. it is electronically certified

[Return to article page](#)

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## **Business Economics**

April, 1999

### **Revenue management: microeconomics and business modeling.**

Author/s: Loren Williams

Revenue management is a discipline that combines statistical techniques of forecasting with quantitative optimization techniques that have their origins in Operations Research; however, it is based squarely on the consumer and firm behavior models that are the stuff of microeconomics. This discipline addresses many of the conventional results from the microeconomics of the firm: choosing revenue-maximizing prices, allocating resources amongst competing product lines, allocating distribution across multiple markets, allocating production across differing technologies. Where the textbook treatment of these results, such as "choose price (quantity) so as to equate marginal revenue with marginal cost," are presented as rules or guides, RM models are used to provide precise solutions, such as "sell twelve units of this product at that price."

It is a discipline that is important to practitioners of business economics, because of its current or potential significance in the business decisionmaking in many firms, and because it is a potent application of the economic tool kit.

Revenue Management had its origins in the newly deregulated world of the airline industry of the early 1980s and has since found its way into all sectors of the travel industry, as well as freight, media, utilities and retail trade. It has been credited with billions of dollars of increased revenue and earnings over the past decade and a half. Its early successes coupled with dramatic reduction in the cost of computational power will inevitably drive this discipline more deeply into industries where it is already mature and more broadly into new industries and markets.

#### **A REVENUE MANAGEMENT MODELING FRAMEWORK**

At its heart, RM comprises a set of business process models in which certain decisions are made. These decisions govern what products a firm sells, to whom the products are sold and how the firm combines its resources to deliver its products. A compact, yet rich framework



in which to consider and organize RM models is that provided by Object Oriented Analysis (OOA), a methodology devised to facilitate business software design, development and evolution (see Booch, 1994 and Jacobson, Ericsson and Jacobson, 1995). The basic elements are objects, which correspond to entities in the real world. The objects have behaviors that may be either internal to themselves or that are reactions to stimuli from other objects. The domain defines the scope of the model and the institutional structure in which the objects interact.

## OBJECTS

Objects are the building blocks of models. RM models use five types or classes of objects: resources, products, customers, competitors and the firm itself. These objects have many potential behaviors that, depending on the specific model, may or may not be explicitly included. (See Table 1). When included, the behaviors are represented as mathematical expressions that appear directly in the formulation of an optimization program, or may be equations used to forecast future behavior.

Table 1

### Revenue Management Model Objects

Object	Modeled Behavior
Resources	Availability, at a point in time Cost Availability at a location
Products	Production technology and flexibility Distribution channels
Customers	Quantity and willingness to pay Postpurchase behavior Sensitivity to competitor offerings
Competitors	Price and availability of substitutes Response to firm actions
Firm	Make decisions across set of choices

## Resources

Resources are the (predominately physical) assets that are available to the firm and are transformed by the firm into products that have value to customers. In the airline industry, these are seats on a flight leg; in the hotel industry these are rooms on a given night; in the outdoor advertising industry, these are billboards in a given location on a given day.

The primary behavior of a resource is its availability over time, which is a function of capacity, current commitments, expected future commitments, and the realization of uncertain or provisional commitments. In most RM models, availability of resources appears as a set of constraint equations on the quantity of product that can be delivered. In some RM models, the resource cost is important and the cost function is modeled explicitly. There are also RM problems in which availability is within the choice set of the firm. In this case, resource availabilities may appear explicitly as decision variables.

## Products

Products are the commitments that the firm makes to deliver bundles of resources to customers. It is these commitments that customers value and are willing to pay for. While some products may "bundle" a single unit of resource, most products comprise multiple units.

One set of important characteristics of products in RM model is their production relationships, the ways in which the firm can "assemble" the product from resources. Many products that appear in RM models can be produced in a variety of different ways. In a media application, for example, the product is an audience, with certain demographic characteristics, over some set of calendar dates. That product may be provided by a very large set of alternative combinations of commercial spots. Or, when a customer purchases a coach class seat on an airline, there are a number of ways that the airline can deliver on that commitment: narrow- or wide-body airplane; aisle, middle or window seat; or an upgrade to first class. Other important characteristics are the product prices and any inherent features of the product that differentiate it from other products. For travel industry products, these features are often purchase or consumption restrictions that are used to prevent arbitrage among customers, such as advance purchase or stayover restrictions.

Products are expressed as a set of definitions or equations that describe the allowable resource bundles. In RM models that optimize product price or availability, these choice variables and product definitions provide the linkage between the objective function value and the underlying resource constraints.

## Customers

Customers are those that value the firm's products, and they may also value products offered by competitors in the market. In some cases, customers are modeled individually, e.g., in the media industry a single customer may request commitment of a complex bundle of resources over an extended period of time. The firm may know a great deal about that particular customer's needs, alternatives and willingness to pay. In other cases, customers are dealt with in the aggregate, as customer types or as market segments, e.g., many firms in the travel industry offer products at certain prices for "qualified" customers, such as AARP discounts.

There are three dominant characteristics of customers in RM modeling. Two of these are the quantity of customers and their willingness-to-pay distributions for each product; i.e., the demand function faced by the firm. The third characteristic is the behavior of the customer once he has agreed to purchase the firm's products, such as the propensity to cancel a reservation prior to departure, or once he has taken delivery of the product, such as the propensity to return a rental car early.

A common issue in estimating the parameters of the demand function is that the firm often does not observe all possible customers, due to capacity constraints or price decisions that

truncate the demand. This is addressed by use of an unconstraining model, which allows the system to "see" all of the demand in the market, whether or not a particular customer or customer type has actually "registered" his or her demand with the firm's sales or distribution system.

Many RM decisions are concerned with demand that has yet to materialize. Forecasting models are required to predict the quantity of customers that will demand each product, at each point in time between now and delivery, and the likelihood that the forecasted demand will hold (i.e., will not cancel) until delivery.

Willingness to pay is not directly observable but is a crucial characteristic in many RM model applications. One way that this characteristic is expressed is as a buy-up propensity, an estimate of the proportion of customers of a certain type that will pay for a higher priced product, if their most preferred product is unavailable. Another way that willingness to pay is modeled is as an explicit own-price elasticity.

These customer behaviors are uncertain, in both individual and market segment models. These uncertainties are often reflected in the RM models by treating quantity demanded as a random variable drawn from distributions whose parameters are estimated from historical behavior and conditioned on the firm's (and competitor's) product price and availability decisions.

#### Competitors

Competitors are other firms whose actions may be relevant to the own-firm, through their affect on customer behavior. To the extent that another firm's products are substitutes, their price and availability are relevant. In the case of an airline, the willingness of a customer to "buy up" when the own-airline's most desired product is not available, may be a function of the availability of like products offered by its competitor(s).

The most prevalent competitor behavior that is reflected in RM models is the current price, and sometimes availability, of the competitor's substitute products, although reliably capturing these data is often difficult. Even in the airline industry, with its electronic distribution systems, it is quite hard to determine precisely what products are competitive to one's own, much less their availability at a point in time.

Another behavior of competitors is their reaction to the own-firm's actions. One way that this can be incorporated in a pricing model is by specifying the speed with which competitors match the own-firm's pricing action. The slower their reaction, the greater the revenue impact of a price reduction, *ceteris paribus*. In other cases, the reaction is modeled as the expected magnitude of the response.

#### Firm

The firm is the entity that is making choices in the furtherance of its objectives. The characteristics of the firm relevant for RM modeling are the choice set available to the firm, its objective(s), and often policy constraints.

The choice set is frequently dictated by technology, policy, regulation and industry standards. For example, airlines would like to discriminate between booking requests on a given flight, based on each passenger's entire itinerary. However, such discrimination is not generally supported in the systems that travel agents use to check availability and confirm reservations.

Choosing, or selecting an action from the firm's choice set, is the behavior that is central in RM modeling. In many cases, the choices are product availability or price. In other cases, they are the assignment of resources to specific customer commitments or to specific products. In still other cases, choices are the terms of an extended commitment to a single customer.

It is common to model the firm's objective as maximizing revenue, or expected revenue, over some time horizon. In cases where costs are relevant to the decisions being made, the objective function is expressed in terms of contribution, rather than revenue. In some cases, the firm's objectives may include achieving a certain market share, or developing relationships that have consequences outside the scope of the model.

Finally, there may be policy constraints peculiar to the firm. For example, a broadcaster may require that no more than two fifteen-second commercials be placed in a single commercial break; or a cruise line may require that any price reductions be rebated to customers that have already purchased.

## DOMAIN

The domain of an RM model is the relevant product/customer space and time horizon. The market is a collection of objects whose interactions are relevant in a specific model. Thus, the market is simply the set of products, customers and competitors whose behaviors influence the choices of the firm that are permitted in the model. In its simplest form, it may comprise only the customers, aggregated into mutually independent market segments, ignoring competitors and any substitutability amongst the firm's products. In more elaborate cases, intrafirm substitution is modeled, along with response to endogenous competitor actions.

In some applications, decisions are atemporal, and the time dimension is unimportant. Although airlines typically make availability decisions over a horizon of about a year, decisions on one departure date may have no important consequences for decisions on other departure dates. In other cases, intertemporal consequences are paramount. When a hotel makes a commitment to a single customer, or a group, that commitment directly affects resource availability over a range of dates. In this case, an important dimension of the optimization model is the horizon over which the

problem is to be solved.

## REVENUE MANAGEMENT PROCESSES

There are many business processes in which decisions are made that are, or could be, fruitfully modeled and solved within this framework. Four general processes for which a number of RM models have been designed and implemented are discussed below.

Modeling choices, based on data quality and parsimony, dictate the degree to which all the potential behavior of the objects is explicitly represented. For example, it is conventional in many applications to ignore the competitor's behavior; thus a "Competitor" object may be nonexistent in that model. It is also often the case that the model representation of the potential product space is limited. Even a modest-sized airline may have over 100,000 feasible itineraries, each with ten or more fare products and operating every day for the next 360 days. An RM model supporting allocation of resources across these products may only model the itineraries with significant demand, and then only for selected departure dates.

## ALLOCATING RESOURCES TO PRODUCTS

This is the most common and well-understood class of RM problems. The original impetus for finding solutions was in the airline industry, as it grappled with the two problems of no-shows and a multiplicity of fare products.

The most basic problem within this class is an airline's choice of how many seats to sell on a flight, given uncertainty in the show-up behavior of customers holding reservations. The solution approaches embody quantifying the tradeoff between the revenue lost when seats are empty (referred to as spoilage), and the costs incurred when more booked customers show up than there are physical seats (referred to as denied boarding costs). As may be seen in Figure 1, this process may be modeled as choosing the allocation of seats to be sold on the flight, such that the expected net cost (spoilage + denied boarding) is minimized; or such that the expected net revenue (flown revenue - denied boarding cost) is maximized. In this example the optimal authorized level of sale is 116 seats.

Another problem is how to allocate resources amongst a variety of product-customer combinations. This is quite a complex problem, because the number of products, which are travel itineraries with certain price, service and restriction characteristics, is very large. Consider the very small example shown in Figure 2. There are twelve one-way itineraries, served by five flights; with ten types of products (full fare, discount with seven-day advance purchase requirement, etc), there are eighty products that could be sold on the Atlanta-LaGuardia (ATL-LGA) flight. If there is only one seat available on this flight, should we accept a discount fare booking for an itinerary originating in Atlanta? Or should we reserve the seat for a business customer traveling to Boston (BOS), from Atlanta, Orlando (MCO), Birmingham (BHM) or Indianapolis (IND), who will pay full price? The answer will depend, inter alia, on the probability of the full-fare

business materializing; the probability of the full-fare customer canceling after she makes her reservation; the availability of seats on other flights from Atlanta to LaGuardia and on other flights connecting on to Boston. We may even consider the estimated lifetime value of customers in the two segments.

This allocation decision is to optimize the use of resources within the market, given the expected demand for each product. But instead of choosing an output level that equates marginal production cost to marginal revenue, optimality requires the firm to choose output levels of all possible products, in order to equate marginal revenue with the marginal opportunity cost, or marginal value, of the resources. If these optimality conditions are achieved, then the production plan, i.e., choice of products to be made available for sale, is optimized. In the exemplary case of only two competing products, this can be visualized as a traditional optimization problem, as shown in Figure 3.

The contours represent expected revenue, given different allocations between the Atlanta-LaGuardia discount product (ATLLGA - M Class) and the Atlanta-Boston full-fare product (ATLBOS - Y Class). The solution is to allocate thirty-four of the fifty remaining seats to the former and sixteen to the latter.

In these models, there is not even a shadow of a competitor. However in practice, RM systems re-forecast demand and re-solve the optimization problem frequently. This has the effect of allowing the model to respond to changes in customer behavior that result from their response to changes in competitors' products prices and availability, without those competitors' actions being represented explicitly in the model.

American Airlines, which pioneered these techniques beginning in 1983 and remains a leader, credits their overall Revenue Management program with \$1 billion in incremental annual revenue (Cook, 1998). All major domestic airlines utilize these techniques on a large scale, as do most of the major international carriers. Furthermore, there are many analogs to these traditional problems in other travel industry businesses. Marriott Hotels and Resorts was the first major hotel firm to embrace these techniques, in 1989, and reports similar successes (Cross, 1997). Now, virtually all major U.S. hotel chains deploy these techniques in some form.

## ALLOCATING RESOURCES TO CUSTOMERS

This is the process by which decisions are made regarding how to combine bundles of resources to deliver complex products to specific customers. An example of an RM model to support this process in the media industry is referred to as the Optimal Placement model (see Williams and Stewart, 1996). The product required by a customer is a quantity of impressions or audience, of a given type or demographic, over some date range. The customer has a budget and is optimizing its choices amongst media types and suppliers. In broadcast media, the resources are commercial spots in a schedule; in outdoor media, they are billboards in a geographic market. The

problem here is that, given that the product can be delivered with many combinations of resources, what is the optimal combination and the minimum price that should be charged? Similar problems also arise in the travel industry, particularly in hotels, that are faced with complex requirement to satisfy a group booking that may require sleeping rooms, meeting rooms and banquet halls.

The difference between the Optimal Placement problem and the traditional production planning problem is that in the former, production costs are essentially negligible. The important costs are the opportunity costs associated with foregone production of alternative products. The optimality conditions require that the difference between the revenue received and the opportunity cost be maximized.

## SETTING PRODUCT PRICES

This process is one for which a number of RM models have been designed. As with the allocation processes described above, some models support decisions on "posted" prices that will be offered to all customers, or all customers in a market segment. Other models support pricing decisions on broader, more complex contracts. (Interestingly, it has been shown that, under some conditions, the optimal pricing and optimal availability controls are equivalent. See Kuyumcu, 1997.)

### Unit Pricing

Unit pricing models are most well developed in the rental car industry. At the time that product availability appears in the electronic distribution channels, usually 90 to 120 days in the future, each product is assigned a price. Product characteristics, including rental location, car type, rental duration, one-way or local rental; anticipated demand; and market positioning and competitor pricing largely govern the initial prices. Once bookings begin to materialize, product demand forecasts are updated. Then an optimization model evaluates the demand relative to the available resources and determines which resources to allocate to each product and the prices to be charged for products that are available.

The allocation of resources is usually in two dimensions. One is determining the number of customers preferring low-value car types that should be upgraded into higher-value car types. Another is the number of cars to make available for rentals of different durations. In addition to the allocations, the model determines the optimal price to charge for each product that is to be offered. The optimization considers expected price responsiveness of customers in different market segments, competitors current prices and market position. Optimality requires that the vector of prices is such that marginal revenue for each product-customer combination is no less than the marginal value of the resources that will be required to just meet the demand.

Hertz was the leader in the development of these tools, in 1989. In 1993, the deployment of such a system was credited with saving

National Car Rental from liquidation. Similar tools are now used almost universally in the rental car industry.

### Relationship Pricing

An example of a model that supports broader contract pricing decisions is the Target Pricing model, developed in the small parcel industry. In this industry, a customer is provided with access to all of the firm's products, e.g., same day delivery, next morning delivery, two-day air, etc., for a specified discount off of the list price, for a specified term. The model captures customer's response to the offer price, given the competitor's current price and expected response and, if the customer has a current contract, the customer's current price. In addition, to capture longer-term customer value, the optimal offers are computed for future years, and via discounting and backward induction, incorporated into the computation of the current year's optimal offer.

A mix of statistical analysis of historical offers, market research and expert judgment is used to initialize the parameters in the model. Once the model is in production, statistical analysis using logistic regression methods is used to update the parameter values. The optimal results generated by the model may be tempered by strategic, market-share objectives. It is also interesting to note that, unlike RM models used for more bulk-oriented freight carriers, the Target Pricing model does not treat resources directly. However, the cost function does reflect the capacity conditions of resources in the network.

As shown in Figure 4, the Target Pricing model balances the likelihood of acceptance with the reduced margin associated with greater discounts. In this example, the optimal discount is about 41 percent off of the list price.

### ALLOCATING RESOURCES TO MARKETS

In this process, decisions are made to allocate resources, or production capacity, among the markets served by the firm. But when allocating resources to markets, the firm is able to take advantage of an additional degree of freedom by optimizing across, as well as within, markets. Two families of RM models have been developed to support these processes: dynamic reallocation models that are used to direct short-term adjustments in resource capacity and airline scheduling models that are used to guide medium-term decisions about the quantity and characteristics of products to be offered in each market.

#### Dynamic Reallocation

Dynamic reallocation is the process of making short-term adjustments in the allocation of resources across markets. This is an important and high-value opportunity for firms that have mobile resources, such as passenger and cargo airlines and rental car companies. In the airline industry, an RM model supporting these



decisions is known as Demand-Driven Dispatch or [D.sup.3]. (Berge and Hopperstad 1993). In the rental car industry, an analogous model is referred to as Fleet Deployment. In either case, the model evaluates whether there is an alternative, more valuable deployment of a fixed quantity and mix of resources, given that within a market the allocation of resources to products is optimal.

The approach is to estimate the net revenue value of adding or reducing resources in the potentially affected markets. The net revenue values are obtained by optimizing the resource usage in all markets with alternative resource configurations. Because resources usually come in bundles (e.g., the number of seats on a 737-300, or the smallest number of car-days that can be transferred from one location to another), feasible adjustments are then evaluated. If the maximal net revenue difference associated with shifting one bundle of resources exceeds the out-of-pocket transfer cost, then the decision to make that specific reallocation is recommended.

A closely related process arises in the context of airline alliances, in which two or more airlines have agreements in which one sells products to their customers that are actually provided by another. There are a variety of forms of agreement by which interfirm allocations are administered; however, the process of determining optimal allocations may be modeled in much the same way as in the [D.sup.3] model. Note that these decisions require a means to allocate the revenues amongst the alliance carriers, a problem that does not arise in the single firm case.

## Scheduling

The process of creating a schedule is perhaps the most complex set of interdependent decisions made at an airline. Although it can be described generally as deciding what products to offer in what markets, the list of specific decisions is very elaborate. How often and at what times of day should service be offered in a market; over what route (hub) should flights serving a market be scheduled; what type of aircraft should be assigned to each flight; which itineraries should be served by "through" flights?

In scheduling models, the products are itineraries that connect two cities, with associated prices, conditions of purchase and restrictions. Demand for the products is estimated for city-pairs at different times of day, and day of week. Constraints are the firm's infrastructure of hubs, its available fleet and their operational characteristics, limits on flight time and frequency at certain airports, and the competitors' schedules. The objective is to maximize expected revenues by choosing the departure times, paths, flight numbers and aircraft assignments that represent the schedule.

In practice, these decisions are represented in several optimization models, because of the size, nonlinearity and integrality of the complete problem. The results of these models have contributed hundreds of millions of dollars to the bottom lines of airlines that have embraced their use (Cook, 1998).

## COMMON THREAD

What ties these RM problems and applications together is their explicit, quantitative approach to the standard results and models of price theory. Simply stated, the job of RM is to support the profit-maximization decisions made in firms that have some degree of market power. These decisions include offering products and setting prices that capture as much consumer surplus as possible, and making short- and long-term production plans. However, unlike academic analysis and comparative statics, RM makes these models operational for the vast number of decisions that multiproduct firms make every day.

## CONCLUSION

Currently, most of the \$200 billion plus worldwide passenger airline revenue is controlled using RM tools. A significant fraction of the worldwide revenue from other travel industry firms (hotels, car and truck rental, cruise lines, passenger rail) is also managed using these tools. Firms in these industries, where RM is well established, routinely claim gains of from 3 percent to 8 percent of annual revenue. Most major U.S. freight firms utilize some form of RM tools, as do some major television broadcasters. Estimates from early successes in these industries are comparable to that experienced in the more mature industries. We expect annual spending on RM tools and services to grow from about \$50 million in 1995 to in excess of \$300 million in 2001. We expect a significant fraction of that growth to occur in industries outside of the traditional travel industry domain.

Some in the Operations Research community, which has been deeply involved in RM since its inception, believe that RM will come to dominate all forms of modeling support for internal firm decisionmaking. In speculating about the future of that discipline, Peter Bell a professor of Management Science at University of Western Ontario and the president of International Federation of Operational Research Societies, summarized this viewpoint, "What will have caught the eye of every senior executive will be applications of [operations research] on the revenue side of the firm... Revenue management concepts will be applied to almost everything that is sold, and will prove to be such a powerful competitive weapon that major firms will be living, and in many cases dying, according to their ... algorithms... The firms with the best Revenue Management will prosper and grow; the remainder will struggle to survive by restricting themselves to local or niche markets (Bell, 1998)."

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